



NATIONAL LIBRARY OF MEDICINE

Bethesda, Maryland



















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C472m  
1980  
HMD/ARCH

# MEDLARS TRAINING PROGRAM

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## Indexing Training Syllabus





MEDLARS TRAINING PROGRAM  
INDEXING TRAINING SYLLABUS

by  
Thelma Charen

NATIONAL LIBRARY OF MEDICINE  
Index Section BSD  
1980

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## PREFACE

This syllabus is meant to supplement the Indexing Training Lectures of the MEDLARS Analyst Training Program.

It is not designed as a substitute for either the lectures or for the Indexing Manual.

This syllabus is intended primarily as a workbook for the use of MEDLARS Analysts training in the Index Section at the National Library of Medicine.





# M E D L A R S

## Indexing Training Schedule

Training lectures will be given each day in the Bibliographic Services Division Training Room. They last from 8:30 am to 12:30 pm.

After lunch each day, the trainees will devote the afternoons from 1 pm to 4 pm to preparing the day's exercise for correction in class at 4 pm.

All practice indexing of journals during the ensuing training weeks will be revised by a MEDLARS Indexing Training Reviser and will enter the MEDLARS system as productive indexing for INDEX MEDICUS and for Search retrieval.

Until the trainee leaves the premises, he will be under the guidance of a Training Reviser who continues indexing training by personal instruction and daily revision of the articles he indexes.

During their stay in Index Section, the trainees will continue to meet each Friday morning at 9 am for additional class instruction on problem areas of indexing.

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## MEDLARS Training Lectures

### Index Section

Lecture I	INDEX MEDICUS history Indexing workflow List of Journals Indexed Depth and Non-Depth rationale IM and NIM rationale
Lecture II	Medical Subject Headings (MeSH)
Lecture III	Data Form - Check Tags
Lecture IV	Subheadings
Lecture V	Subheadings
Lecture VI	References and tools Indexing Manual
Lecture VII	Indexing policy by category - A, B, C
Lecture VIII	Indexing policy by category - D, E, H
Lecture IX	Indexing policy by category - G4-G12
Lecture X	Indexing policy by category - F, G1-3, I-N, Z
Lecture XI	Demonstration of the indexing of an article
Lecture XII	Data Form - Descriptive
Lecture XIII	Indexing philosophy

CHANGED TO 100

## INTRODUCTION

- I. MEDLARS: definition, purpose and scope
- II. Brief history of the National Library of Medicine
- III. Definition and scope of INDEX MEDICUS and CUMULATED INDEX MEDICUS; definition and scope of MEDLINE
- IV. Brief history of their origins
  - △ Index-Catalogue
  - △ Current List of Medical Literature (CLML)
  - △ AMA's Quarterly Cumulative Index Medicus (QCIM)
  - △ Index Medicus (IM)
  - △ Cumulated Index Medicus (CIM)
- V. Derivative publications of MEDLARS
- VI. Indexing: definition
- VII. Types of indexing
  - △ by professional indexers
  - △ by publishers
  - △ by authors
- VIII. Limitations of MEDLARS (See page 5)

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# CHRONOLOGY - Supplementary Data

## NAMES

1865 Army Medical Library  
 1952 Armed Forces Medical Library  
 1956 National Library of Medicine

## INDEX-CATALOGUE

1880-1895	1st series	16 vol	Monographs & periodicals
1896-1916	2d series	21 vol	Monographs & periodicals
1918-1932	3d series	10 vol	Monographs & periodicals
1936-1948	4th series	11 vol	Monographs & periodicals
	(M-Mez)		
1955	(Mh-Mn)		
1959	5th series	3 vol	Monographs only: author & title
1961			Monographs only: subjects A-M, N-Z

## VOCABULARY

1880-1955	Index-Catalogue	Historical usage & current limits
1941-1949	Current List	Index-Catalogue usage & ad lib
1950-1953	Current List	AMA's QCIM (Quarterly Cumulative Index Medicus) Subject Headings
1954-1959	Current List	NLM's SHAL (Subject Heading Authority List)
1960-1962	Index Medicus	MeSH, 1st ed.
1963	Index Medicus	MeSH, 2d ed.
1964	Index Medicus	MeSH, 3d ed.
1965-present	Index Medicus	MeSH, published annually

## SUBHEADINGS

1880-1961	Index-Catalogue	Subheadings: standard & ad lib
1950-1959	Current List	Subheadings: standard
1960-1962	Index Medicus	Subheadings: standard
1963-1965	MEDLARS	No subheadings
1966-	MEDLARS	Subheadings: standard





## ONLINE SYSTEMS

1963-1967	MEDLARS I
1970	AIM-TWX ( = ELHILL 1)
1971	MEDLINE ( = ELHILL 2)
1975	MEDLARS II ( = ELHILL 3)

The above system of MEDLARS II represents the mechanized hopper into which indexing production feeds matter directly. In addition to MEDLINE, there are many other data bases within the MEDLARS array of online systems.

Examine the Fact Sheet handed out in class for current information on all MEDLARS and MEDLARS-associated data bases.



## DERIVATIVE PUBLICATIONS OF MEDLARS

At the present time there are 28 derivative publications produced through MEDLARS. A list of them is published on the inside of the back cover of each monthly issue of INDEX MEDICUS.

The American Dental Association, publisher of the INDEX TO DENTAL LITERATURE, the first recurring bibliography under MEDLARS, has one of its employees on the Index Section staff, responsible for the indexing of the dental journals in the LIST OF JOURNALS INDEXED IN INDEX MEDICUS and the revising of dental journals indexed by the ADA in Chicago. All articles containing terms in the field of dentistry and oral medicine indexed in non-dental journals are also reviewed by the ADA indexer.

The American Hospital Association, publisher of the HOSPITAL LITERATURE INDEX, has one of its employees on the Index Section staff, responsible for the indexing of hospital journals and journals in the field of health care and its delivery that are in the LJI, and for the revising of hospital and health care journals indexed at the American Hospital Association in Chicago. All articles containing terms in these fields in non-hospital and non-health care journals are also reviewed by the AHA indexer here.

Examine the complete list of recurring bibliographies presented on the inside back cover of any issue of INDEX MEDICUS. Note the variety of specializations. A special interest group discusses with the Library his needs and the subject headings relative to his field of interest constitute the basis of his bibliography. Articles indexed during the regular course of preparation for each INDEX MEDICUS, bearing the subject terms of the designated special area, appear in generally the same form of citation familiar to INDEX MEDICUS users and comprise the special bibliography at the stated intervals.

1. The following information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 2. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 3. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 4. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 5. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 6. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 7. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 8. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 9. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization. 10. This information is being furnished to you for your information and use only. It is not to be distributed outside your organization.

MEDLARS and MEDLINE Limitations  
in  
Literature Analysis

The following concepts are at present not able to be indexed with precision in MEDLARS:

1. concepts not expressed by MeSH headings or by the coordination of
  - two or more main headings
  - a main heading & a subheading
  - a main heading & a check tag
2. any degree of quality or quantity
  - degrees of adverse effects (except as poisoning)
  - degrees of beneficial effects
  - more or less
  - partial or subtotal or total
  - deep or superficial
3. time relationships (except as TIME FACTORS)
  - before or after or how long
  - early or late
  - often or seldom (except if RECURRENCE)
4. primary or secondary (except as /complications as related to /etiology)
5. major or minor
6. above or below, right or left
7. surgical approach
8. amount of therapy



## BIBLIOGRAPHIC SERVICES DIVISION

### Organization

The class will have been taken on a tour of the National Library of Medicine. This will put in perspective the Bibliographic Services Division as related to the other divisions of NLM.

- I. Bibliographic Services Division (BSD) personnel
- II. Index Section personnel
- III. Index Section Work Flow

10

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1000-1000-1000  
1000-1000-1000



BIBLIOGRAPHIC SERVICES DIVISION

Chief: Mrs. Grace McCarn  
Head, Index Section: Mr. Lloyd Wommack  
Head, MEDLARS Management:

INDEX SECTION \*

Head: Mr. Lloyd Wommack  
Training Supervisor: Mrs. Thelma Charen  
Unit Head A: Mrs. Peri Schuyler  
Unit Head B: Dr. Elizabeth Van Lenten  
Revisers: see routing slip  
Indexers: see routing slip  
Quality Control: Mrs. Frances Spina

\* Telephones: 301-496-6766 (Heads)  
301-496-3261 (Indexers)  
301-496-3294 (Quality Control)



OPTIONAL MOUNTING

1100

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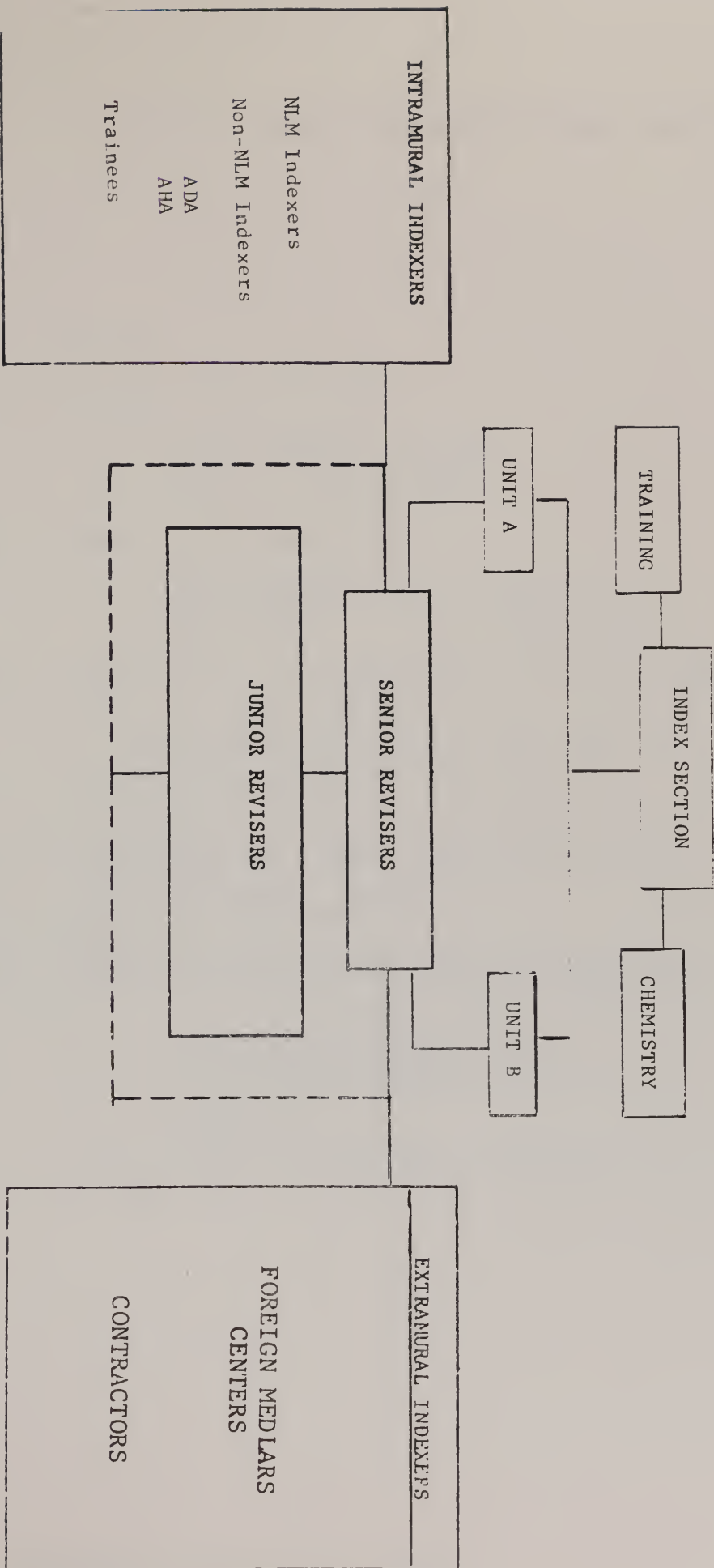
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IIIIV. Inflexionis griseolus

1. Solitaire  
 2. Priority 3 - 1000000000  
 3. Priority 2 - 1000000000  
 4. Priority 1 - 1000000000

Implications for M... ..

LIST OF JOURNALS INDEXED IN INDEX MEDICUS  
(LJI)

- I. Purpose
- II. Coverage under MEDLARS
  - o INDEX MEDICUS journals
  - o special list journals
- III. Parts: arrangement by
  - o abbreviation
  - o full title
  - o subject
  - o geography
- IV. Consultants on Literature Selection for MEDLARS:
  - function and activities (See page 10)
- V. Criteria for inclusion (See page 11)
- VI. Formulation of journal title abbreviation
- VII. Handstamp (See page 12)
- VIII. Indexing instructions (See also page 13)
  - o Priority 1 - Depth Rush
  - o Priority 2 - Depth
  - o Priority 3 - Non-Depth
  - o Selective
- IX. Implications for MEDLINE retrieval

1970

1970

1970

1970

University of Nebraska Medical Center  
Department of Pathology  
1000 University of Nebraska Medical Center  
Omaha, Nebraska 68105

19

1970

1970

## CONSULTANTS ON LITERATURE SELECTION FOR MEDLARS

Executive Secretary:

Clifford A. Bachrach, M.D.

Head, MeSH; Editor, INDEX MEDICUS

National Library of Medicine

Mr. William K. Beatty, Librarian  
Professor of Medical Bibliography  
Northwestern University

Edward J. Huth, M. D.  
Editor  
Annals of Internal Medicine

Mr. David Bishop, Librarian  
University of California at San  
Francisco

Saul Jarcho, M. D.  
Editor Emeritus  
Bulletin of the New York Acad-  
emy of Medicine

Walter Friedlander, M.D.  
Professor of Neurology and Head  
Clinical Neurology Information  
Center  
University of Nebraska Medical  
Center

Alexis Shelokov, M. D.  
Chairman, Microbiology De-  
partment  
University of Texas Health  
Science Center

Robert Whalen, M. D.  
Vice Chairman  
Health Planning Commission  
New York State

Norman P. Shumway, M. D.  
Professor Emeritus of Medicine  
Case-Western Reserve University  
Former Head, MeSH

1870

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Q<sup>d</sup> ... ..  
P<sup>a</sup> ... ..  
... ..  
... ..  
... ..

THE UNIVERSITY OF CHICAGO

1840



The reprint below was excerpted from the Introduction to the monthly issues of INDEX MEDICUS. Note the arrowed paragraph referring to the Consultants on Literature Section for MEDLARS.

### MATERIALS INDEXED

*Index Medicus* contains citations to the serial journal literature and to selected monographs.

In the selection of materials for indexing, the National Library of Medicine is advised by a group of distinguished physicians, medical editors, and medical librarians. The Library indexes the literature that has been judged most useful to *Index Medicus* users, but it is not possible to include every journal and monograph that might contain useful articles.

An effort is made to maintain a reasonable balance of subject matter. The inclusion of a journal or monograph should not be construed as indicating that it is considered superior to one that is not indexed; the omission of a publication does not necessarily reflect on its quality.

Original journal articles are indexed, as well as those letters, editorials, biographies, and obituaries that have substantive contents. Abstracts of articles are never indexed. In certain journals which cover fields other than biomedicine, only those articles related to biomedicine are selected for inclusion in *Index Medicus*.

The reprint below was excerpted from the 1966 LJI stating selection criteria. They still characterize our inclusions.

Among the criteria used  
for selection of titles were:

- (1) Sponsorship of the journal by a professional organization of recognized status in a given discipline or subject area.
- (2) Sponsorship by a national academy or a national institute.
- (3) Existence of an active editorial board consisting of knowledgeable and critical referees with high professional standing.

Monographs which have been indexed include published proceedings of various congresses and symposia, and selected multi-authored works. Each issue of *Index Medicus* and *Cumulated Index Medicus* carries a list of monographs indexed therein.

The journal title abbreviations used in *Index Medicus* are formulated according to the rules of the *American National Standard for the Abbreviation of Titles of Periodicals*,<sup>1</sup> and the individual words of the titles are abbreviated according to the forms given in the *Liste d'Abbreviations de Mois des Titres de Périodiques*.<sup>2</sup>

For the abbreviation of any specific journal cited in *Index Medicus*, see the *List of Journals Indexed in Index Medicus (LJI)* in the January issue of *Index Medicus* and in the annual cumulation. *LJI* is also available separately from the Government Printing Office (see National Library of Medicine Publications, inside front cover of any monthly issue of *Index Medicus*).

- (4) Regular contributions to a journal by leaders in the subjects to which the journal is addressed.
- (5) Strict adherence to an established format in presentation of methodology, tables, graphs, references, and other data.
- (6) Publication policy that prohibits promotional, parochial, or secular approaches in the journal.

[illegible]

## STAMPS



Regular NLM Property

Stamp

SERIAL THROUGHPUT  
CONTROL

NLM

PRI	ABST	SL	C
①	②	③	④
01	99	11	C1
⑤ ISSN			
⑥ PUBL DATE			
⑦ VOL			
⑧	NO	PT	SUPPL

Control Card  
Stapled to  
Each Journal  
IndexedHandstamp data  
given in top  
block is de-  
scribed and dis-  
cussed in the  
MEDLARS INDEXING  
MANUAL, Section 3

Received by Foreign Center

Rec'd by Indexer

Rec'd by Reviser

Mailed to NLM

Received by NLM

Received by Index Section

Rec'd by Indexer

Rec'd by Reviser

Sent to Stacks

29	Date
NA	
NA	
NA	
NA	



Date to be Keyboarded

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ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 10-11-61 BY 1043

Priority 1 and 2 articles must  
to cover major points and be  
classified, not merely with  
intended to cover local  
events.

Indexers are free to index the  
articles in the index the  
in 2 journal as non-occasional  
from a Priority 2 journal in great  
All REVIEW articles are to be  
the priority number assigned.

## DEPTH AND NON-DEPTH RATIONALE

- I. Degree of depth predetermined (see Handstamp)
- II. General characteristics of Depth and Non-Depth journals
- III. Correlation of depth/non-depth indexing with journal priorities
- IV. Definition of Depth indexing as an unlimited number of headings to describe the content of the article fully and adequately
- V. Definition of Non-Depth indexing as the number of headings necessary to describe fully and adequately  
THE POINT OF THE ARTICLE
- VI. Expected number of headings for Depth; for Non-Depth
- VII. Examples of both from journals actually indexed to the correct degree
- VIII. Relation of Depth and Non-Depth to the headings printed in INDEX MEDICUS and to those stored in the computer

See the INDEXING MANUAL, Section 5: DEPTH INDEXING

NOTE: Priority 1 and 2 journals must be indexed completely to cover major points and minor points discussed (i.e., discussed, not merely mentioned). Priority 3 must be indexed to cover basically only the major points of the article.

Indexers are free to judge each article on its own merits and to index the rare article from a Priority 1 or 2 journal as non-depth, and the less rare article from a Priority 3 journal in great depth.

All REVIEW articles are indexed in depth regardless of the priority number assigned.

THE  
FEDERAL  
BUREAU OF  
INVESTIGATION  
UNITED STATES  
DEPARTMENT OF JUSTICE  
WASHINGTON, D. C. 20535

## IM AND NIM RATIONALE

### I. Synonyms

IM: INDEX MEDICUS  
Print

NIM: NON-INDEX MEDICUS  
Store

### II. Definitions

IM: a term destined to be printed  
in the published INDEX MEDICUS

NIM: a term destined for computer  
storage only

III. Availability: both IM and NIM entries are  
stored in the computer and are available  
for machine retrieval

### IV. Application

IM: represents the major points of  
the article indexed

NIM: represents subjects discussed in  
the article but not necessarily  
the point of the article

represents aspects of a subject  
serving as search parameters

See Introduction, page 1  
AND MONDAY, MAY 1, 1961  
BRIEF SUMMARY of the  
1961-1962 season



## V. Philosophical orientation in the indexing of medical literature

### Primary orientation:

- △ organ
- △ disease
- △ cause
- △ treatment

Secondary orientation: any premise leading to the understanding of disease and how to prevent or treat it

- △ diagnostic, therapeutic or research method
- △ organ function
- △ physiological process
- △ metabolism
- △ organisms
- △ chemicals
- △ drugs
- △ paramedical facets

## VI. Parameters usually IM

- △ the point of the article
- △ organs
- △ diseases
- △ organisms: causative agents & veterinary animals
- △ chemicals
- △ therapies

## VII. Parameters usually NIM

- △ data not the point of the article
- △ technics
- △ age of subjects
- △ sex of subjects
- △ animals studied experimentally

See Indexing Manual, Section 6: INDEX MEDICUS HEADINGS AND NON-INDEX MEDICUS HEADINGS; Section 20: INDEXING PRINCIPLES; et passim



## COMPARISON OF PRIORITY 1, 2 AND 3 JOURNALS

Priority	Urgency	Type of Journal	Coverage of Article	Degree of Depth of Indexing	Number of Headings	IM & NIM
1	Rush	Research Clinical Spec	Major points Minor points	Very deep	8-10	Several IM Many NIM (discussed)
2		Research Clinical Spec	Major points Minor points	Very deep	8-10	Several IM Many NIM (discussed)
3		Clinical Paramed	Major points	Not as deep	5-6	Several IM Few NIM (discussed)



## EXERCISE 1

## INDEX MEDICUS

Current  
Monthly  
Copy

Please remove from the Index Section's reference shelves a copy of the INDEX MEDICUS monthly issues. Examine a recent issue, noting the following items.

## Subject Section

1. Form of entry
2. Alphabetization of entries
3. Typography
4. English titles vs foreign titles
5. Role of the journal title abbreviation
6. Language symbol
7. Position of author
8. Number of authors
9. Accents and diacriticals

## Author Section

1. Name as author
2. Name as biographe
3. Number of authors
4. Treatment of co-authors
5. Vernacular titles
6. Accents and diacriticals
7. Anonymous works

## Other Sections

1. Inside covers, front & back
2. Introduction
3. LJI supplement
4. NLM Literature Searches
5. Bibliography of Medical Reviews
6. List of Monographs Indexed
7. Other



## EXERCISE 2

## INDEX MEDICUS

1. What are the major sections of INDEX MEDICUS? Note complementary material.
2. How many authors are given in citations in the subject section?
3. How many authors are given in citations in the name section?
4. Do accent marks appear in the subject section?
5. Do translations appear in the author section?
6. Are there any cross-references in the subject section?
7. Are there any cross-references in the author section?
8. How are the citations arranged in the subject section under a given subject?
9. What is the fewest number of citations for an article by A. Fairchild on Freud's contribution to the discovery of cocaine?
10. Can anonymous articles written in English be found in INDEX MEDICUS? Where?
11. How are monographs cited in the subject section?
12. How are monographs cited in the author section?





## EXERCISE 3

## INDEX MEDICUS

Using an issue of INDEX MEDICUS, under what main heading or headings did you find an article on the subjects below? Use only a monthly issue of INDEX MEDICUS or the CUMULATED INDEX MEDICUS: do not use a MeSH.

1. The release of histamine
2. The effect of thumbsucking on the gums
3. The surgical treatment of hip dislocation
4. Fats in the brain
5. Infected burns
6. Chocolate in relation to coronary disease
7. Infections in children
8. The chemistry of *Bacillus megatherium*
9. Brain pathology in kuru
10. Blood coagulation in pregnant women



- I. Definition & purpose of an Authority List
- II. Synonyms: thesaurus, controlled vocabulary, standardized vocabulary, MeSH
- III. Common features
  - o typography
  - o main headings
  - o cross-references
  - o subheadings
- IV. History (see Chronology, page 2)
- V. Creation & content
  - o indexers
  - o searchers
  - o medical trends
  - o frequency of coordination
  - o physician users
  - o professional task forces
- VI. Sections of MeSH
  - o prefatory matter
  - o alphabetical list
  - o trees
- VII. Public MeSH & ANNOTATED MeSH (see page 21)
- VIII. Alphabetical MeSH
  - o typography
  - o tree number: definition & use
  - o official MeSH terminology (see page 22)
  - o cross-reference apparatus (see pages 23-25)
  - o annotations
  - o relation to trees
  - o how to use
- IX. Trees
  - o organization: 15 categories
  - o margin & indention relationships
  - o relation to alphabetized list
  - o names & content of categories
  - o subcategories
- X. Coverage & scope (see page 26)
- XI. Related MeSH products
- XII. Advantages of MEDLARS: controlled vocabulary + text-word searching



## PUBLIC MeSH and ANNOTATED MeSH

This lecture is for general information only. Indexers must index using only the ANNOTATED MeSH.

- I. Use
- II. Content
- III. Format
- IV. Typography
- V. Publication note
- VI. Coverage

Public MeSH	ANNOTATED MeSH
Main headings	Main headings
Cross-references	Cross-references
Tree numbers	Tree numbers
- -	Check Tags
- -	Citation Types
- -	Geographics
Publication note	History note
- -	Annotations
- -	Online note



## MeSH TERMINOLOGY

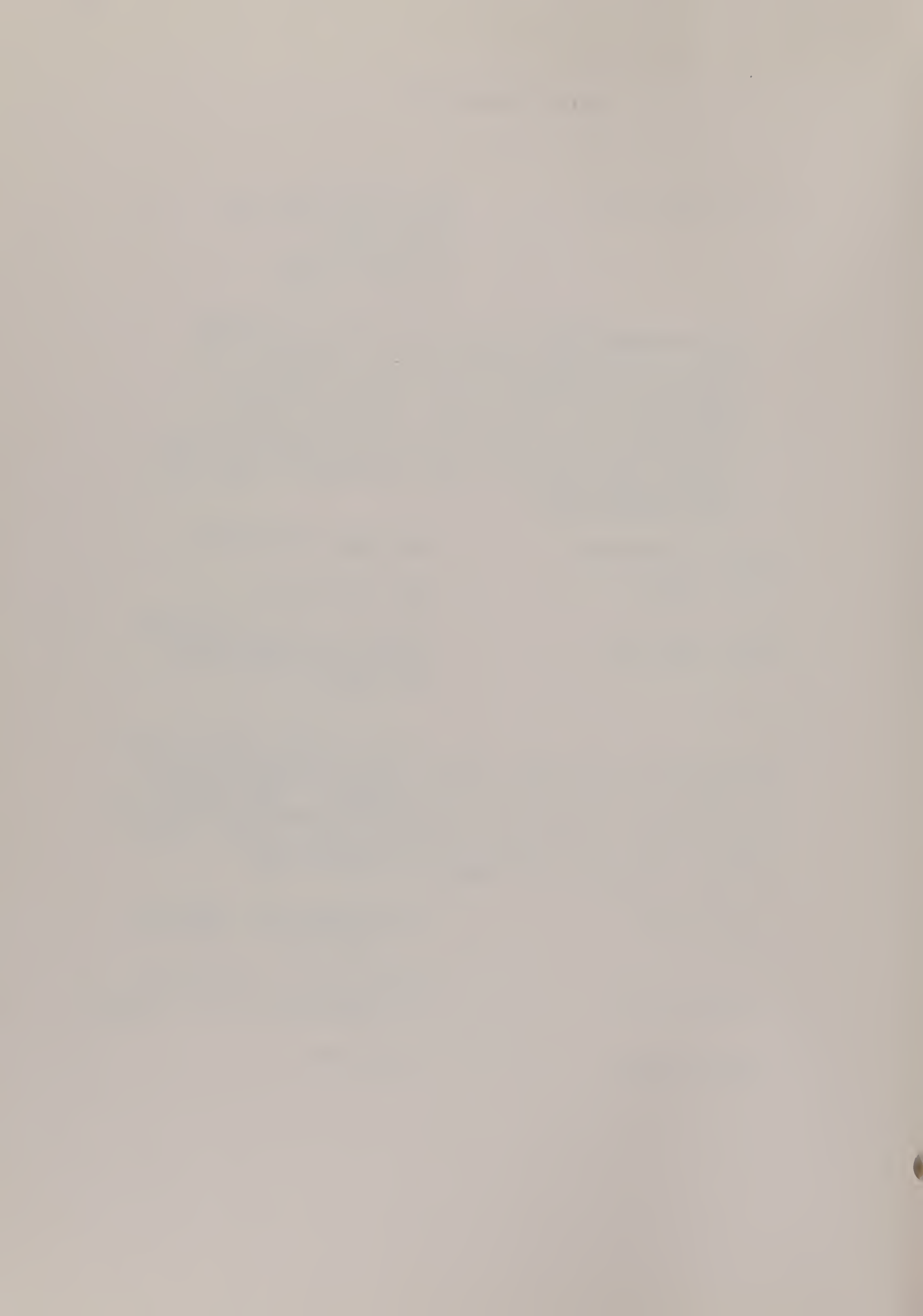
MAJOR DESCRIPTORS	Main Headings Geographic Headings Check Tags Citation Types Non-MeSH terms
-------------------	--

MAJOR DESCRIPTOR is the name given to a MeSH entry under which citations are stored in the computer and which do not require mapping. Since this is true of five different types of descriptor as noted above, indexers and revisers avoid the term "major descriptor" as too general and prefer to call headings by the specific names above.

MINOR DESCRIPTORS	<u>see under</u> references
ENTRY TERMS	<u>see</u> references
ENTRY VERSIONS	shortened forms as noted in the Annotated MeSH thus, DF:

Regardless of the name you refer to it as, any or all of the above concepts may be typed on a Data Form by an indexer in the course of indexing. The computer will handle all required mapping internally. You will usually type the heading as it appears at the margin or as it appears in a legal shortened form.

ANNOTATIONS	technology for indexers, catalogers, searchers
HISTORY NOTES	catalogers & searchers; singular use by indexers
ONLINE NOTES	searchers





Major Descriptor	→	<b>LANGUAGE ARTS (NON MESH)</b> L1 143.506.423+ 'language arts' is indexed LANGUAGE or LINGUISTICS	←	(NON MESH) not to be used by Indexers
		LANGUAGE COMPREHENSION TESTS see LANGUAGE TESTS F4 711.400+		
Major Descriptor	→	<b>LANGUAGE DEVELOPMENT</b> F1.525.200.310+ no qualif 68 see related LEARNING SPEECH XU CHILD LANGUAGE XR PSYCHOLINGUISTICS	←	cross-references: see related  see under from see related from
Tree Number	→	<b>LANGUAGE DISORDERS</b> F3.126.557+ do not use /drug eff /physiol /rad eff. do not confuse with SPEECH DISORDERS read differentiation of LANGUAGE & SPEECH above under LANGUAGE 67 XR VERBAL BEHAVIOR XR VERBAL LEARNING	←	annotation
		<b>LANGUAGE TESTS</b> F4 711.400+ only /class /instrum /methods /stand /util (if by MeSH definition) 79 X LANGUAGE COMPREHENSION TESTS X VOCABULARY TESTS XU APHASIA TESTS		
Entry Term	→	LANGUAGES, COMPUTER see COMPUTERS L1.382.119.200+ L1 417.208+		
Entry Term	→	LANKAMYCINS see KUJIMYCINS D9 203.408.445 D20 85.445		
		<b>LANOLIN</b> E 10.516.945.507 D26.368.405.424 D26.698.523.424 D25-26 qualif	←	annotation
		<b>LANOSTEROL</b> D4 808.247.222.222.347.557 D4 808.247.808.607 D10.516.851.590 /biosyn permitted, do not use /defic /physiol 74(72) X KRYPTOSTEROL	←	see from cross-reference
		LANTHANIDES see METALS, RARE EARTH D1.552.550+		
		<b>LANTHANUM</b> D1.268.473 D1.552.550.474 La-139, do not use /analogs /biosyn /defic /physiol. La-138 = LANTHANUM (IM) + ISOTOPES (NIM). La-126-137, 140-144 = LANTHANUM (IM) + RADIOISOTOPES (IM)		
		LANUGO see HAIR A1.835.288+	←	see reference
Major Descriptor	→	<b>LAOS</b> Z1.252.145.435	←	geographic
		LAPAROSCOPY see PERITONEOSCOPY E1.418.764		
		<b>LAPAROTOMY</b> E4 406 avoid used too loosely in the literature; not a coord for operative surg on abdominal organs; restrict to technic of surg incision of abdom wall at any point; usually exploratory; prefer /surg with specific organs		



annotation	→	<b>LAMPREYS</b> B2 493.181.590 IM when IM, only /anat /blood-esf-urine /class /embryol /genet /growth /immunol /metab /microbiol /parasitol /physiol (75) search CYCLOSTOMI S 1968-74 see under CYCLOSTOMES
history note	→	
online note	→	
see under reference	→	
		<b>LANADIGENIN</b> see DIGOXIGENIN D4 808 155.160.349 350
tree number with +	→	<b>LANATOSIDES</b> D9 203 408 180 261 657 + D18 267 324 632 + do not use /analog /biosyn /defic /physiol; includes lanatosides A, B & C X DIGITANIDIOS XU DIGITANOSIDE
tree number without +	→	<b>LANDSCAPING, HOSPITAL</b> see MAINTENANCE, HOSPITAL N2 278 354 422 450 N2 628 472 N4 452 442.422 450
history note	→	<b>LANGAT VIRUS</b> B4 909.777.70.525 do not use /blood-esf-urine /cytol (75) see under ARBOVIRUS S
		<b>LANGERHANS CELLS</b> A11 436 506 A 11 qualif, cutaneous cells do not confuse with ISLANDS OF LANGERHANS (pancreas) 73(69)
main heading (provisional)	→	
tree number without + &	→	<b>LANGUAGE</b> F1 145 209 399 L1 143.506 + what is spoken, do not confuse with LINGUISTICS (see note there) or SPEECH (language as it comes out of the mouth); no qualif, SIGN LANGUAGE is available
tree number with +	→	
		<b>LANGUAGE ARTS (NON MESH)</b> L1 143 506.423 + 'language arts' is indexed LANGUAGE or LINGUISTICS
		<b>LANGUAGE COMPREHENSION TESTS</b> see LANGUAGE TESTS F4 711 400 +
		<b>LANGUAGE DEVELOPMENT</b> F1 525 200.310 + no qualif 68 see related LEARNING SPEECH XU CHILD LANGUAGE XR PSYCHOLINGUISTICS



## CROSS-REFERENCES

## Directional References

- |    |             |                           |   |
|----|-------------|---------------------------|---|
| 1. | See         | (called Entry Term)       | a synonym or near synonym                         |
| 2. | See under   | (called Minor Descriptor) | a specific concept under a more inclusive concept |
| 3. | See related |                           | a helpful suggestion to be accepted or by-passed  |

## Corresponding Backwards References

- |     |    |                  |
|-----|----|------------------|
| 1'. | X  | see from         |
| 2'. | XU | see under from   |
| 3'. | XR | see related from |



## MEDICAL SUBJECT HEADINGS (MeSH): General Characteristics

### I. COVERAGE

The over-all coverage of MeSH is excellent and the user - indexer or searcher - should expect to find a term in MeSH.

1. Organs, tissues, cells
2. Diseases
3. Drugs, chemicals, endogenous and other substances
4. Living organisms: micro-organisms, higher animals  
plants
5. Procedures: diagnostic, therapeutic, surgical,  
anesthetic, analytic
6. Physiological processes
7. -OLOGIES and -IATRIES and other specialties, fields  
or disciplines
8. Health care and delivery of health care
9. Miscellaneous medical and paramedical concepts
10. Geography

### II. FORM

1. Anglo-Saxon for organs; Latin or Greek in the ab-  
sence of the Anglo-Saxon and for adjectival  
forms (BRAIN vs CEREBRAL; KIDNEY vs RENAL or  
NEPHR-; etc.)
2. Alphabetization: seek above or below the needed term
3. Inversions to bring like concepts together
4. Singular or plural form
5. Singular or plural drugs
6. Interchangeable compounds (autoradiography vs radio-  
autography; photomicrography vs microphotog-  
raphy; etc.)
7. Pre-coordinated headings
8. Specialties vs organs and diseases (see 7 above at  
Coverage)
9. Hyphenations for syndromes
10. Hyphenations for standard orthography (self help vs  
self-help devices; etc.)
11. Apostrophe s (-'S) or s apostrophe (-S')
12. Accents: in headings and in translations





## MeSH: Inconsistencies of Form

Here are some samples of inconsistency in the form of various MeSH headings. There are several explanations for these inconsistencies. They are shown here not in criticism but to alert the Indexer to their existence.

## Words for disease or diseases:

COMMUNICABLE DISEASES  
HEART DISEASES  
AUTOIMMUNE DISEASES

CORONARY DISEASE  
CHRONIC DISEASE  
IATROGENIC DISEASE

## -in childhood and childhood:

TUBERCULOSIS IN CHILDHOOD

SCHIZOPHRENIA, CHILDHOOD

## Words using noun form or adjective form:

SKIN MANIFESTATIONS  
EYE MANIFESTATIONS

ORAL MANIFESTATIONS  
NEUROLOGIC MANIFESTATIONS

## Inversions and non-inversions:

HEMORRHAGE, GASTROINTESTINAL  
HEMORRHAGE, ORAL

CEREBRAL HEMORRHAGE  
RETINAL HEMORRHAGE  
UTERINE HEMORRHAGE



## EXERCISE 4

MeSH

In Non-Depth Indexing we are frequently called upon to use a general term instead of three or four specifics which would be required for Depth Indexing.

Pretend that you need the following groups of concepts for Non-Depth Indexing. Using the Tree Structures, what single main heading would you use to cover the groups typed below?

1. Papova virus, Yaba virus and C-type viruses
2. Myotonia, myoclonus and amyotonia
3. Raticides, insecticides and weed-killers
4. Pilocarpine, acetylcholine and neostigmine
5. The thymus and lymph nodes
6. The eyes, eyebrows and eyelids
7. Basophils, lymphocytes and erythrocytes
8. Anthracosilicosis, silicosis and silico-  
tuberculosis
9. Rice, puffed rice, wheat, puffed wheat and  
cornflakes
10. Nerve block and spinal anesthesia



## EXERCISE 5

## MeSH

What main heading or main headings in MeSH do you think should be used to cover articles on the following subjects? The word or phrase below was that used by the author and represents terms or concepts required for indexing.

1. Radiorenography
2. Subvalvular stenosis
3. Lichen
4. Dishydrosis
5. Disabled persons
6. Spreading cortical depression
7. Debré-Fanconi syndrome
8. Microfilaria diurna infection
9. Prefrontal lobotomy
10. Pulmonary lobectomy
11. Ventricular neoplasms
12. Bacterial survival
13. Visual pigments
14. Reinforcement
15. Medical jurisprudence
16. Higher nervous activity
17. Dog bites
18. Bicycles and motorcycles
19. Midline granuloma
20. Bacterial cultures
21. Leg fractures
22. Salt-free diet
23. Cooked foods
24. Tomatoes
25. Cerebral edema
26. Tubular dysfunction
27. Chocolate candy
28. Double vision
29. Posterior cranial fossa
30. Sympathetic nerves
31. Urinals
32. Hepatic amebiasis
33. As if personality
34. Materia medica
35. Breathing

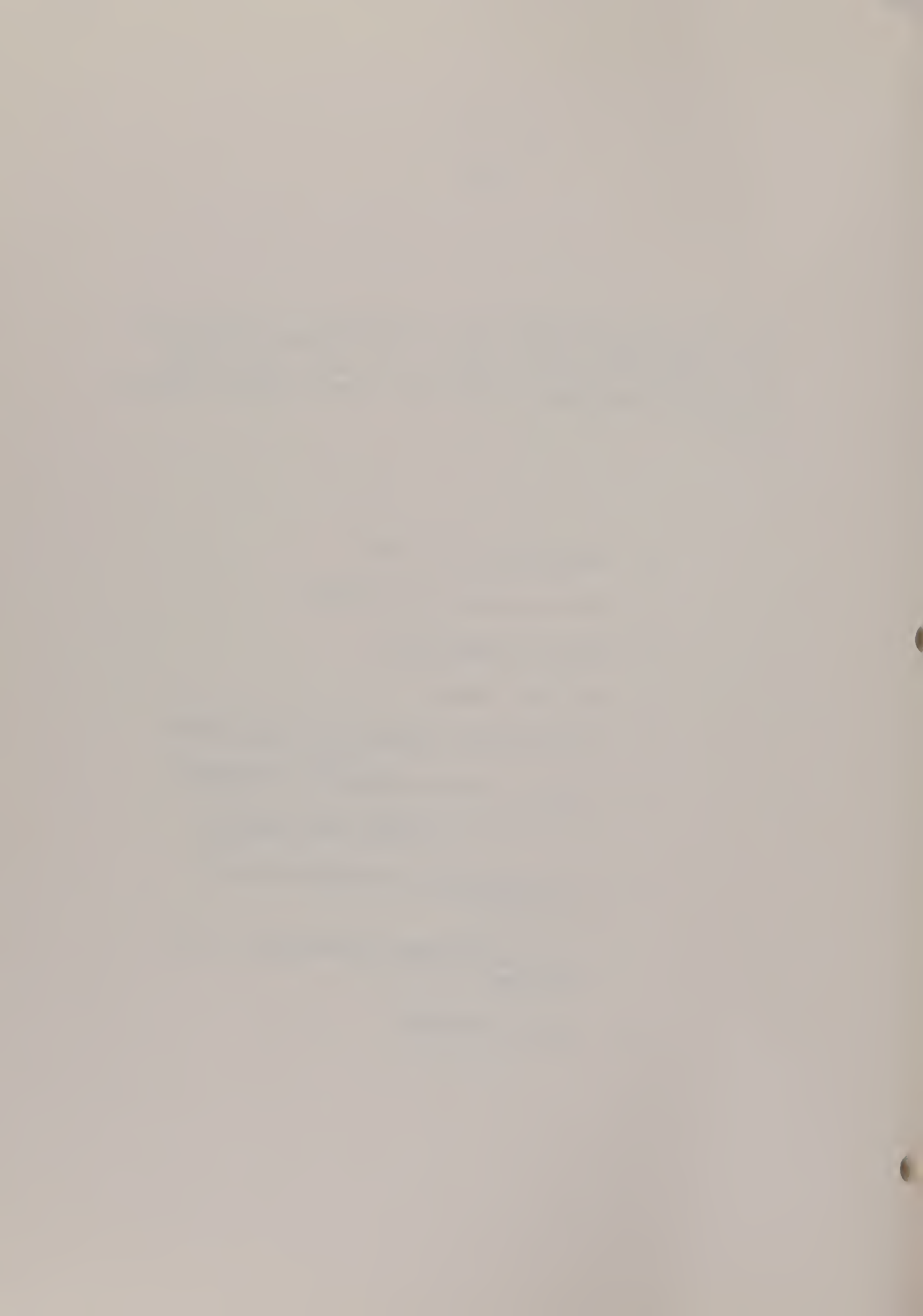


## EXERCISE 6

MeSH

The following exercise has two purposes: to give you more experience in the use of the Alphabetical MeSH and to show you how a searcher actually goes about retrieving articles on the very simple search requests below.

1. Pseudomonads in water
2. Radiostrontium in fallout
3. Rectal temperature
4. Salivary sugars
5. Pathological anatomy as a specialty
6. Injuries from automobile accidents
7. Fractures in boxing and baseball
8. Streptococcal and staphylococcal meningitis
9. Postappendectomy obstruction of the duodenum
10. Mitral stenosis





## EXERCISE 7

## ANNOTATED MeSH

1. What do the following abbreviations mean?

GEN	65	SPEC: SPEC qualif
IM	70(65)	A 11 qualif
NIM coord	no qualif	TN

2. When did "incomplete abortion" come into the system?
3. When did "habitual abortion" come into the system?
4. How do I index "blood physiology"?
5. What is a synonym for "blood platelets"?
6. Will this article appear in one or two places in INDEX MEDICUS: "The BIOLOGICAL TRANSPORT of BIOPTERIN"?
7. May I index an article on ACADEMIES AND INSTITUTES/manpower?
8. What subheadings may I use for "amplifiers" ?
9. What are two specific features of weather in MeSH?
10. May I index SNOW/adverse effects for frostbite from walking in the snow?
11. When did WATER MOVEMENTS come into the system?
12. Where do I index "chemical water pollution"?
13. May a cataloger catalog a book entitled "Chemical Water Pollution in the United States" under WATER POLLUTION, CHEMICAL /UNITED STATES?
14. Where do I index "solid waste disposal"?
15. Missed abortion is permitted with animals. Is eugenic abortion? Is legal abortion?



16. An article on calcium absorption would be indexed under CALCIUM and ABSORPTION. Is CALCIUM printed in INDEX MEDICUS? Is ABSORPTION printed in INDEX MEDICUS?
17. What are some synonyms for needle biopsy?
18. What are some concepts included in BIOPHARMACEUTICS?
19. Where do I index "nasal intubation"?
20. Is there a Technical Note on absenteeism?
21. Which is better on a data form and why?
  - a. AC-GLOBULIN or FACTOR V
  - b. ABSCESS, CEREBRAL or BRAIN ABSCESS
  - c. ABSCISSIC ACID I or ABSCISSINS
  - d. BLOOD PLASMA VOLUME or PLASMA VOLUME
  - e. BIOMATERIALS or BIOCOMPATIBLE MATERIALS
  - f. WATTLES or COMB AND WATTLES
22. Which is more likely to be printed in INDEX MEDICUS: BLOOD CIRCULATION or BLOOD CIRCULATION TIME?
23. What is the difference between a term without a statement concerning IM and a term with a statement about IM?
24. In how many Trees is BLOOD? Why?
25. What is the Tree number for "abortion seekers"? Why is it assigned here? Why not another Tree instead of or in addition to?
26. Why is BIOMETRY wrong for articles on a comparison of the size of men's and women's hands?
27. BIOLOGY and BIOPHYSICS are both specialties. Why is not the MeSH annotation the same? Examine all Trees referred to to get the answer.
28. Is WATER/poisoning permitted?
29. How do I index micro-organisms in water?
30. Where do I index "blood picture"?



8	PAGINATION 1398-403	9	LANGUAGE ENG. <u>GER</u>	11	ANONYMOUS A <input type="checkbox"/>	17	REFS	13	SUBJECT NAME	33
---	------------------------	---	-----------------------------	----	---	----	------	----	--------------	----

AUTHOR DATA	Braun A, Weiss B
-------------	------------------

TITLE (Eng or Transl)	[ Brain scintigraphy in the differential diagnosis of intracranial lesions ]
-----------------------	--

TITLE (Vernac or Translit)	
----------------------------	--

9	<input type="checkbox"/> HIST ART <input type="checkbox"/> HIST BIOG <input type="checkbox"/> BIOG OBIT <input type="checkbox"/> SYMPOS <input type="checkbox"/> PROCEED <input type="checkbox"/> TECH REPT <input type="checkbox"/> MONOGR <input checked="" type="checkbox"/> ENG ABST	20	A <input type="checkbox"/> PREGN B <input type="checkbox"/> INF NEW (to 1 mo) C <input checked="" type="checkbox"/> INF (1-23 mo) D <input type="checkbox"/> CHILD PRE (2-5) E <input type="checkbox"/> CHILD (6-12) F <input checked="" type="checkbox"/> ADOLESC (13-18) G <input checked="" type="checkbox"/> ADULT (19-44) H <input checked="" type="checkbox"/> MID AGE (45-64) I <input type="checkbox"/> AGED (65 +)	J <input type="checkbox"/> CATS K <input type="checkbox"/> CATTLE L <input type="checkbox"/> CHICK EMBRYO M <input type="checkbox"/> DOGS N <input type="checkbox"/> FROGS O <input type="checkbox"/> GUINEA PIGS P <input type="checkbox"/> HAMSTERS Q <input type="checkbox"/> MICE R <input type="checkbox"/> MONKEYS S <input type="checkbox"/> RABBITS	T <input type="checkbox"/> RATS U <input type="checkbox"/> ANIMAL V <input checked="" type="checkbox"/> HUMAN W <input checked="" type="checkbox"/> MALE X <input checked="" type="checkbox"/> FEMALE Y <input type="checkbox"/> IN VITRO Z <input type="checkbox"/> CASE REPT a <input type="checkbox"/> CLIN RES b <input checked="" type="checkbox"/> COMP STUDY	c <input type="checkbox"/> ANCIENT d <input type="checkbox"/> MEDIEVAL e <input type="checkbox"/> MODERN f <input type="checkbox"/> 15th CENT g <input type="checkbox"/> 16th CENT h <input type="checkbox"/> 17th CENT i <input type="checkbox"/> 18th CENT j <input type="checkbox"/> 19th CENT k <input type="checkbox"/> 20th CENT	l <input type="checkbox"/> NIH SUP m <input type="checkbox"/> NON NIH SUP	12	AUTHOR <input checked="" type="checkbox"/> AFFIL	22	AUTHOR <input checked="" type="checkbox"/> ABST	1403
---	---	----	---	--	---	--	--	----	---	----	--	------

21	TECHNETIUM / * diag use	1
2		2
3	BRAIN NEOPLASMS / * radionuclide	3
4		4
5	DIAGNOSIS, DIFFERENTIAL	5
6		6
7	CEREBROVASCULAR DISORDERS / * radionuclide	7
8		8
9	BRAIN NEOPLASMS / radiogr	9
10		10
11	CEREBRAL ANGIOGRAPHY	11
12		12
13	ECHOENCEPHALOGRAPHY	13
14		14
15	BRAIN ABSCESS / radionuclide	15
16		16
17	HYDROCEPHALUS / radionuclide	17
18		18
19		19
20		20
21		21
22		22
23		23
24		24
25		25
26		26
27		27
28		28
29		29
30		30
31		31
32		32
33		33
34		34
35		35



## DATA FORM

## I. Purpose and disposition

## II. Appearance \*

- o general neatness
- o clarity in typing
- o uniform margins
- o correct spelling
- o pencilled emendations
- o double spacing in translations
- o double spacing of main headings
- o capitalization of MAIN HEADINGS
- o lower case and abbreviations of sub-headings
- o care and clarity of Xing Check Tags

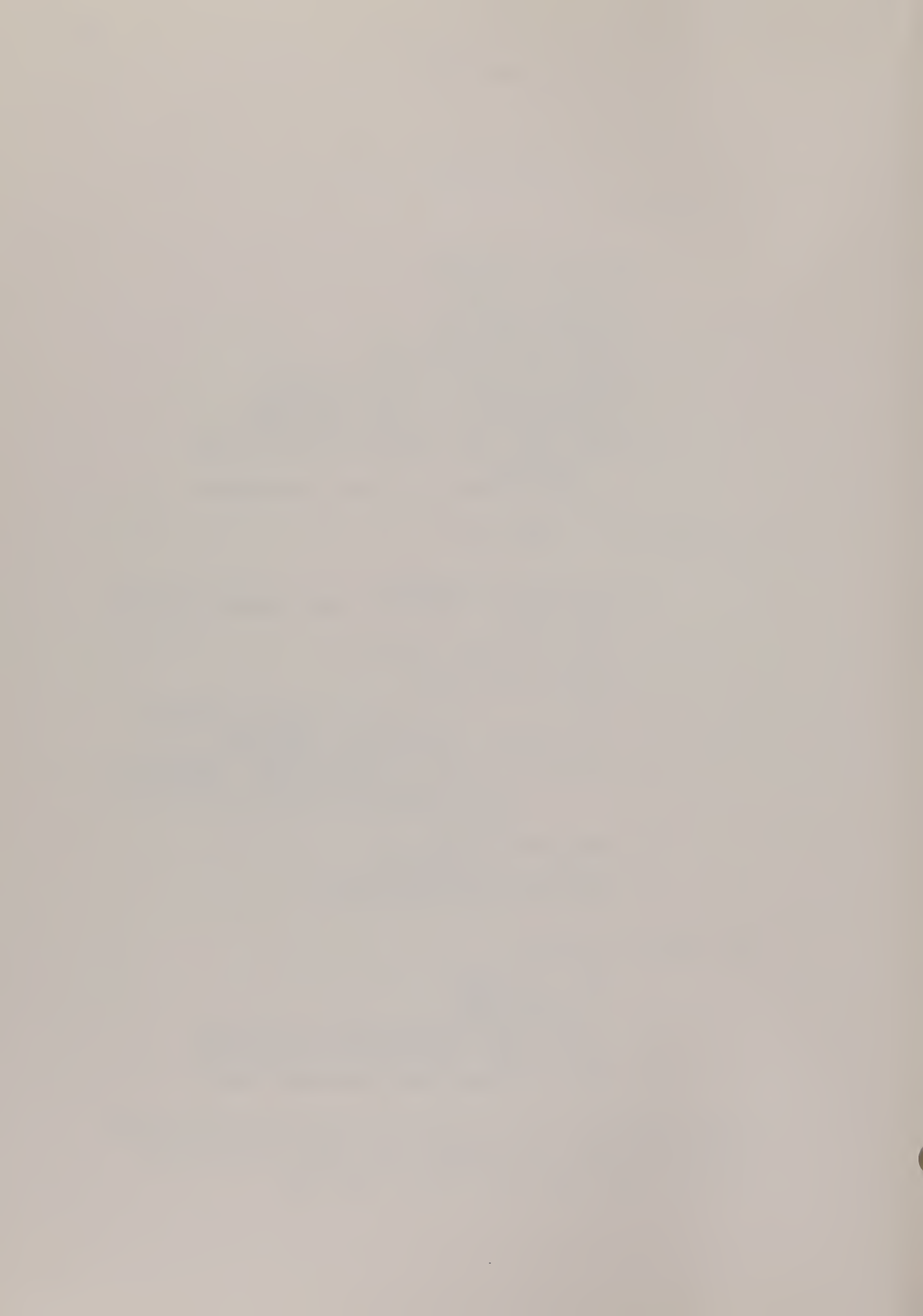
## III. Descriptive indexing \*

- o centering of typing
- o pagination: standard, non-standard, passim
- o authorship
- o references for reviews
- o biographical data
- o titles
- o translations: brackets, language symbol
- o vernacular: punctuation, accents
- o marking of titles: half-blocks, subtitles, capitalization, accents, numerals, punctuation
- o supplied titles
- o marking of abstracts
- o highlighting affiliation

## IV. Subject indexing

- o MAIN HEADINGS
- o / subheadings
- o IM and NIM: definition and purpose
- o Check Tags: definition and purpose
- o Abbreviations and shortened forms

\* These lectures will be given on the last day of the course so that the indexers may apply them afresh the next day when they begin indexing.





## V. Check Tags

- o definition & purpose
- o HUMAN
- o ANIMAL
- o sex of human or animal: FEMALE, MALE
- o age of human only
- o PREGNANCY
- o specific animal: pre-printed; supplied
- o Charen's Law of Useful Redundancy: example:  
FEMALE + PREGNANCY + LABOR, etc.
  
- o IN VITRO: MeSH definition & restriction
- o CASE REPORT
- o COMPARATIVE STUDY
  
- o History tags: interrelation of HISTORICAL  
ARTICLE, HISTORICAL BIOGRAPHY, CURRENT  
BIOGRAPHY-OBITUARY, Field 15, the sub-  
heading /history and the date column
  
- o Field 19 G MONOGR
  
- o ENG ABST: when to use, standards, relation to
  
- o AUTHOR ABSTRACT in Field 22
  
- o SUP tags: full entry, short forms, purpose & use;  
relation to Field 24
  
- o AUTHOR AFFILIATION: when to use, length,  
purpose & use
  
- o principle of Check Tags as NIM vs IM for  
infants & children, newborn infants, preg-  
nancy, experimental animals vs veterinary  
animals
  
- o special handling of physicians & famous persons:  
position on Data Form, definition of FAMOUS  
PERSONS, required Check Tags



## CHECK TAGS

A Check Tag is simply an arbitrary item which must be looked for ROUTINELY in every article. It is a facet of an article which is of potential significance to the most important special-interest groups we serve: the clinicians, the scientists in experimental research, the NLM History of Medicine Division, and the users of drug literature. The Check Tags indicated on the Data Form reflect the present wishes of these groups and could be modified under the supervision of MeSH should more or different ones be found essential to the medical community.

A Data Form bearing the main heading GOUT and the Check Tag CHILD could mean three things:

1. that an article was entitled GOUT IN CHILDREN and concerned this disease in this age group in general as a clinical entity;
2. that an article was entitled GOUT and in reporting his cases, the author listed seven of which one was a child;
3. that an article was entitled GOUT IN A CHILD: AN UNUSUAL CASE.

The coordination of GOUT and CHILD in any of these hypothetical articles will bring forth from the computer on a requested search all three in answer to this question:

"Do you have any article in your system  
on gout in which a child figures?"

If we judge the main headings under which an Indexer indexes an article to be the most important aspect of indexing, the second most important is the Check Tag. Its value to retrieval cannot be over-emphasized and an Indexer must learn to seek it out and supply it automatically.



## CHECK TAGS: IM vs NIM for Age and Pregnancy Tags

INFANT, CHILD, ADOLESCENCE, ADULT, MIDDLE AGE, AGED

These tags are always checked (i.e., they are NIM) for routine articles on physiological processes, diseases & psychological aspects of any infant, child, etc. That is, an article on cancer in children is indexed NEOPLASMS (IM) + CHILD (NIM, the check tag). Digestion in the elderly is indexed under DIGESTION (IM) + AGED (NIM, the check tag).

The exception is the newborn infant. This is made IM for normal states: digestion in the newborn infant is indexed DIGESTION (IM) + INFANT, NEWBORN (IM). Diseases in newborn infants is indexed under the name of the disease (IM) + INFANT, NEWBORN, DISEASES (IM) + the check tag INFANT, NEWBORN (NIM).

## PREGNANCY

Normal pregnancy is always IM; deviations from the normal is usually one of the PREGNANCY COMPLICATIONS headings (IM) + PREGNANCY (NIM, the check tag).

See the next page for examples of indexing and checking tags.



## CHECK TAGS

In the examples below only the marking of the tags 20 A-I is illustrated. Let us assume that we have also marked the tags HUMAN for the infants and both HUMAN and FEMALE for pregnancy.

Pancreas anatomy in the infant:

20	J <input type="checkbox"/> CATS
A <input type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE
B <input type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO
C <input checked="" type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS
D <input type="checkbox"/> CHILD PRE (2-5)	

PANCREAS / \* anat

Pancreas anatomy in the newborn infant:

20	J <input type="checkbox"/> CATS
A <input type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE
B <input type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO
C <input type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS
D <input type="checkbox"/> CHILD PRE (2-5)	

PANCREAS / \* anat

\* INFANT, NEWBORN

Pancreatitis therapy in infants:

20	J <input type="checkbox"/> CATS	T <input type="checkbox"/>
A <input type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE	U <input type="checkbox"/>
B <input type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/>
C <input checked="" type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS	W <input type="checkbox"/>
D <input type="checkbox"/> CHILD PRE (2-5)		X <input type="checkbox"/>
E <input type="checkbox"/> CHILD (6-12)	O <input type="checkbox"/> GUINEA PIGS	Y <input type="checkbox"/>

PANCREATITIS / \* ther

Pancreatitis therapy in newborn infants:

20	J <input type="checkbox"/> CATS	T <input type="checkbox"/> RATS	c <input type="checkbox"/> AN
A <input type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE	U <input type="checkbox"/> ANIMAL	d <input type="checkbox"/> MED
B <input checked="" type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN	e <input type="checkbox"/> MOD
C <input type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE	f <input type="checkbox"/> 15+
D <input type="checkbox"/> CHILD PRE (2-5)		X <input type="checkbox"/> FEMALE	g <input type="checkbox"/> 16+

PANCREATITIS / \* ther

INFANT, NEWBORN, DISEASES / \* ther

Pancreas function in pregnancy:

20	J <input type="checkbox"/> CATS
A <input type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE
B <input type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO
C <input type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS

PANCREAS / \* physiol

\* PREGNANCY

Pancreatitis therapy in pregnancy:

20	J <input type="checkbox"/> CATS	T <input type="checkbox"/> RATS
A <input checked="" type="checkbox"/> PREGN	K <input type="checkbox"/> CATTLE	U <input type="checkbox"/> ANIMAL
B <input type="checkbox"/> INF NEW (to 1 mo)	L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN
C <input type="checkbox"/> INF (1-23 mo)	M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE
D <input type="checkbox"/> CHILD PRE (2-5)		X <input type="checkbox"/> FEMALE

PANCREATITIS / \* ther

PREGN COMPL / \* ther





## CHECK TAGS: Experimental Animals and Veterinary Animals

### Experimental animals:

The identity of the animal figuring in any article is always supplied by the indexer. The most common experimental animals are pre-printed on the Data Form. If the animal in the study does not appear pre-printed, type the animal heading from MeSH in Field 21.

The animal check tag is naturally NIM. The animal supplied in Field 21 will therefore naturally be NIM.

### Veterinary animals:

This is loosely defined as "non-experimental", "non-check-tag" animals and will figure in anatomical studies & physiological studies where the species is important as a species and in veterinary articles.

In such cases the name of the animal will be IM and will take a subheading (this will be discussed in detail later). When another animal picked up for depth indexing figures in addition to the animal which is IM and therefore the point, or in comparison with the major animal, subheadings should be used.

Index diseases in animals under the precoordinated animal/diseases term (IM) + the name of the animal (NIM), whether pre-printed or supplied.

See the next page for examples of indexing and checking tags.



## CHECK TAGS

In the examples below, note that whether an experimental animal or a veterinary animal, whether IM or NIM, the tag ANIMAL is always checked.

## Anatomy of the cat joint:

J <input type="checkbox"/> CATS	T <input type="checkbox"/> RATS	c <input type="checkbox"/>
K <input type="checkbox"/> CATTLE	U <input checked="" type="checkbox"/> ANIMAL	d <input type="checkbox"/>
mo) L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN	e <input type="checkbox"/>
M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE	f <input type="checkbox"/>

CATS / \* anat

JOINTS / \* anat

## Treatment of arthritis in Siamese cats:

J <input checked="" type="checkbox"/> CATS	T <input type="checkbox"/> RATS	c <input type="checkbox"/>
K <input type="checkbox"/> CATTLE	U <input checked="" type="checkbox"/> ANIMAL	d <input type="checkbox"/>
io) L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN	e <input type="checkbox"/>
M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE	f <input type="checkbox"/>
	X <input type="checkbox"/> FEMALE	g <input type="checkbox"/>

CAT DISEASES / \* ther

ARTHRITIS / \* vet

ARTHRITIS / ther

## Effect of cortisone on joint enzymes in arthritis in the cat:

J <input checked="" type="checkbox"/> CATS	T <input type="checkbox"/> RATS	c <input type="checkbox"/>
K <input type="checkbox"/> CATTLE	U <input checked="" type="checkbox"/> ANIMAL	d <input type="checkbox"/>
mo) L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN	e <input type="checkbox"/>
M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE	f <input type="checkbox"/>
o) X <input type="checkbox"/> FEMALE		g <input type="checkbox"/>

CORTISONE / \* pharm

JOINTS / \* drug eff

JOINTS / enzymol

ARTHRITIS / \* enzymol

## Anatomy of the cat joint (the article discusses monkeys' joints too):

J <input type="checkbox"/> CATS	T <input type="checkbox"/> RATS	c <input type="checkbox"/>
K <input type="checkbox"/> CATTLE	U <input checked="" type="checkbox"/> ANIMAL	d <input type="checkbox"/>
L <input type="checkbox"/> CHICK EMBRYO	V <input type="checkbox"/> HUMAN	e <input type="checkbox"/>
M <input type="checkbox"/> DOGS	W <input type="checkbox"/> MALE	f <input type="checkbox"/>
	X <input type="checkbox"/> FEMALE	g <input type="checkbox"/>
O <input type="checkbox"/> GUINEA PIGS	Y <input type="checkbox"/> IN VITRO	h <input type="checkbox"/>
P <input type="checkbox"/> HAMSTERS	Z <input type="checkbox"/> CASE REPT	i <input type="checkbox"/>
Q <input type="checkbox"/> MICE		j <input type="checkbox"/>
R <input type="checkbox"/> MONKEYS	b <input type="checkbox"/> COMP-STUDY	k <input type="checkbox"/>
S <input type="checkbox"/> RABBITS		

CATS / \* anat

JOINTS / \* anat

MONKEYS / anat



Dr. Michael DeBakey

15 SUBJECT NAME DeBakey M
------------------------------

19

A <input type="checkbox"/> HIST ART	c <input type="checkbox"/> ANCIENT
B <input type="checkbox"/> HIST BIOG	d <input type="checkbox"/> MEDIEVAL
C <input checked="" type="checkbox"/> BIOG-ORIT	e <input type="checkbox"/> MODERN
	f <input type="checkbox"/> 15th CENT
	g <input type="checkbox"/> 16th CENT
	h <input type="checkbox"/> 17th CENT
	i <input type="checkbox"/> 18th CENT
G <input type="checkbox"/> MONOCR	j <input type="checkbox"/> 19th CENT
H <input type="checkbox"/> ENG ABST	k <input type="checkbox"/> 20th CENT

## UNITED STATES

Michael DeBakey, M.D.

(20)	A <input type="checkbox"/> PREGN	(19)	A <input checked="" type="checkbox"/> HIST ART	T <input type="checkbox"/> RATS	c <input type="checkbox"/> ANCIENT
B <input type="checkbox"/> INF NEW (to 1 mo)	B <input type="checkbox"/> HIST BIOG	V <input checked="" type="checkbox"/> HUMAN	U <input type="checkbox"/> ANIMAL	d <input type="checkbox"/> MEDICAL	
C <input type="checkbox"/> INF (1-23 mo)	C <input checked="" type="checkbox"/> BIOG OBST	W <input type="checkbox"/> MALE	X <input type="checkbox"/> FEMALE	e <input type="checkbox"/> MODERN	f <input type="checkbox"/> 15th CENT
D <input type="checkbox"/> CHILD PRE (2-5)	X <input type="checkbox"/> CHILD (6-12)	Y <input type="checkbox"/> IN VITRO	Z <input type="checkbox"/> CASE REPT	g <input type="checkbox"/> 16th CENT	h <input type="checkbox"/> 17th CENT
E <input type="checkbox"/> ADOLESC (13-18)	G <input type="checkbox"/> ADULT (19-44)			i <input type="checkbox"/> 18th CENT	j <input type="checkbox"/> 19th CENT
F <input type="checkbox"/> MID AGE (45-64)	H <input type="checkbox"/> ENG ABST	b <input type="checkbox"/> COMP STUDY		k <input checked="" type="checkbox"/> 20th CENT	
I <input type="checkbox"/> AGED (65+)					

## HEART SURGERY / hist

UNITED STATES

George Washington's  
illnesses

⑮ SUBJECT NAME  
Washington G

(19)	<input checked="" type="checkbox"/> HIST ART	c	<input type="checkbox"/> ANCIENT
A	<input checked="" type="checkbox"/> HIST ART	d	<input type="checkbox"/> MEDIEVAL
B	<input checked="" type="checkbox"/> HIST BIOG	e	<input type="checkbox"/> MODERN
C	<input type="checkbox"/> BIOG OBIT	f	<input type="checkbox"/> 15th CENT
		g	<input type="checkbox"/> 16th CENT
		h	<input type="checkbox"/> 17th CENT
		i	<input checked="" type="checkbox"/> 18th CENT
		j	<input type="checkbox"/> 19th CENT
		k	<input type="checkbox"/> 20th CENT
H	<input type="checkbox"/> ENG ABST		
G	<input type="checkbox"/> MONOCR		

## \* FAMOUS PERSONS

UNITED STATES

Did Washington have gout?

⑮ SUBJECT NAME  
Washington G

<input type="checkbox"/> PREGN	<input type="checkbox"/> T <input type="checkbox"/> RATS	<input type="checkbox"/> C <input type="checkbox"/> ANCIENT
<input type="checkbox"/> INF NEW (to 1 mo)	<input type="checkbox"/> U <input type="checkbox"/> ANIMAL	<input type="checkbox"/> d <input type="checkbox"/> MEDIEVAL
<input type="checkbox"/> INF (1-23 mo)	<input type="checkbox"/> V <input checked="" type="checkbox"/> HUMAN	<input type="checkbox"/> e <input type="checkbox"/> MODERN
<input type="checkbox"/> CHILD PRE (2-5)	<input type="checkbox"/> W <input checked="" type="checkbox"/> MALE	<input type="checkbox"/> f <input type="checkbox"/> 15th CENT
<input type="checkbox"/> CHILD (6-12)	<input type="checkbox"/> X <input type="checkbox"/> FEMALE	<input type="checkbox"/> g <input type="checkbox"/> 16th CENT
<input type="checkbox"/> ADOLESC (13-18)	<input type="checkbox"/> Y <input type="checkbox"/> IN VITRO	<input type="checkbox"/> h <input type="checkbox"/> 17th CENT
<input type="checkbox"/> ADULT (19-44)	<input type="checkbox"/> Z <input type="checkbox"/> CASE REPT	<input type="checkbox"/> i <input checked="" type="checkbox"/> 18th CENT
<input type="checkbox"/> MID AGE (45-64)		<input type="checkbox"/> j <input type="checkbox"/> 19th CENT
<input type="checkbox"/> AGED (65+)	<input type="checkbox"/> b <input type="checkbox"/> COMP STUDY	<input type="checkbox"/> k <input type="checkbox"/> 20th CENT

GOUT / \* hist

## \* FAMOUS PERSONS

UNITED STATES

# Contribution of DeBaKey to heart surgery

<b>(29)</b>	A   PREGN	I   RATS	c   AMCIENT
B   INF NEW (to 1 mo)	A <del>X</del> HIST ART	U   ANIMAL	d   MEDIEVAL
C   INF (1-23 mo)	B   HIST BIOG	V <del>X</del> HUMAN	e   MODERN
D   CHILD PREC (2-5)	C <del>X</del> BIOG OBIT	W   MALE	f   15th CENT
E   CHILD (6-12)		X   FEMALE	g   16th CENT
F   ADOL ESC (13-18)	G   MONOGR	Y   IN VITRO	h   17th CENT
G   ADULT (19-44)	H   ENG ABST	Z   CASE REPT	i   18th CENT
H   MID AGE (45-64)	b   COMP STUDY		j   19th CENT
I   AGED (65+)			k <del>X</del> 20th CENT

## HEART SURGERY / \* hist

UNITED STATES



# Summary of Affiliation, Abstracts and Support

Tag	Priority 1 & 2 English	Priority 1 & 2 Foreign	Priority 3 English	Priority 3 Foreign
<div> <div> 12 </div> <div> AUTHOR  <input type="checkbox"/> AFFIL </div> </div>	check this tag	check this tag	do not check	do not check
<div> <div> 22 </div> <div> AUTHOR  <input type="checkbox"/> ABST </div> </div>	check this tag	check this tag but also <div> 19 <div> <input type="checkbox"/> ENG ABST </div> </div>	do not check	do not check Field 22 but check <div> <input type="checkbox"/> ENG ABST </div> <div> 19 </div>
SUPPORT Tags	check this tag	check this tag	check this tag	check this tag





## EXERCISE 8

## IM &amp; NIM

Using a Data Form as a reference, indicate whether you would index the WORDS typed in CAPITALS as IM or NIM.

1. the heart rate in INFANTS
2. breathing in NEWBORN INFANTS
3. respiratory diseases in NEWBORN INFANTS
4. respiratory diseases in INFANTS
5. headache in the MIDDLE AGED
6. smoking among American ADOLESCENTS
7. INFANT mortality in thalidomide therapy
8. PREGNANCY in experimental schistosomiasis in DOGS
9. PREGNANCY in DOGS
10. ectopic PREGNANCY in a pet beagle
11. PREGNANCY in high-income ADOLESCENTS
12. plant poisoning in CATTLE
13. experimental arthritis in MICE
14. precocious adult behavior in young RATS
15. motor neurons in RABBITS
16. injuries caused by covered wagons in the 19TH CENTURY
17. injuries in chariots in ANCIENT ROME
18. history of research on the liver in the 19TH CENTURY
19. blood groups in MONKEYS
20. peptic ulcer in a 6-year-old CHILD; unusual case



## EXERCISE 9

## Check Tags

Using a Data Form for reference, indicate here what check tag or tags, if any, you would index under for articles on subjects discussing the following:

1. both humans and animals
2. children without the exact age given by the author
3. US Army recruits
4. both rats and pigs
5. a 70-year-old elephant
  
6. newborn mice
7. an MD dying in 1977
8. an MD accepting an award
9. a biographical sketch of 20th century Nobel Prize winners in medicine
10. the lung capacity of newborn infants
  
11. liver circulation in the elderly
12. outbreak of colds in pre-school children
13. voting practices among the elderly
14. complications of pregnancy in dogs
15. contribution of Benjamin Franklin to 18th century electrophysiology
  
16. a history of syphilis giving case studies of famous artists
17. the growth of infants
18. submerged bacterial cultures
19. corrosion of dental amalgam in the aged mouth
20. corrosion of dental amalgam
  
21. in vivo and in vitro corrosion of dental amalgam
22. ancient medicine in China
23. an unusual case of staphylococcal infection in a dog
24. treatment of chickenpox in preschool children
25. testicular tumors in young men; comparison with middle-aged men



## COORDINATION

Coordination or coordinate indexing is the use of two or more indexing terms in various combinations to describe the content of an article.

Coordination is described and illustrated in the MEDLARS INDEXING MANUAL in Section 4.2.

MEDLINE users apply coordination on almost all their searches. Seldom will a requester ask for citations on GOUT: rather he will require some specific aspect of gout or gout in relation to some other parameter. Our indexing by coordination and our picking up of significant discussions permit the searcher to retrieve by any coordination of the aspects we have covered, specific facets and relationships requested by the user.

Through correct and complete coordination by the indexer, a searcher can learn the relationships of headings in an article and will often find the coordinations useful in the absence of an abstract.

Aside from their high speed, the value of computers in information services lies in the wondrous application to coordination in retrieval.

Since the concept of coordination is geared to machine retrieval, Indexers will almost never index a single term without coordinating it with another term: with one or more main headings, with one or more subheadings, with one or more check tags or with one or more combinations of all.

Indexers will be asked repeatedly by their revisers, "What is the coordinate for ....?" If unrevised, the indexer will repeatedly ask himself the same question and index accordingly. Annotations in MeSH spell out required coordinates or suggested coordinations and instructions in the MEDLARS INDEXING MANUAL always speak in terms of coordinates. All indexing instructions in the various TECHNICAL NOTES will be issued in terms of coordinates since this is the only way we can serve searchers.



TYPES OF COORDINATION IN MEDLARS

Note that the \* means that the concept is printed in INDEX MEDICUS and that concepts without the \* are stored in the computer, available for retrieval in a search.

- 1. MAIN HEADING + MAIN HEADING
  - a. both equal in significance
    - \* LIVER                      \* PNEUMONIA
    - \* GOUT                      \* STREPTOCOCCAL INFECTIONS
  - b. one subordinate
    - \* HOSPITALS, SPECIAL STATISTICS
    - \* HEPATITIS
    - CHILD
- 2. MAIN HEADING + check tag
  - \* HEPATITIS / \* prev
- 3. MAIN HEADING + subheading
  - HEPATITIS / \* prev
- 4. PRE-COORDINATED MAIN HEADING
  - a. two MAIN HEADINGS originally
    - \* LIVER GLYCOGEN = originally \* LIVER + GLYCOGEN
    - \* MITOCHONDRIA, LIVER = originally \* MITOCHONDRIA + \* LIVER
  - b. MAIN HEADING + check tag
    - \* SCHIZOPHRENIA, CHILDHOOD = originally \* SCHIZOPHRENIA + CHILD
  - c. MAIN HEADING + subheading
    - \* COMMUNICABLE DISEASE CONTROL = originally COMMUNICABLE DISEASES / \* prev





## PRE-COORDINATED HEADINGS

A pre-coordinated heading is one which was created as a single term from two or more headings originally occurring together very frequently in the literature. Although liver glycogen is easily retrievable in a coordinate system as LIVER + GLYCOGEN, the frequent co-occurrence suggests LIVER GLYCOGEN, a better term since the resultant combination can be further qualified by coordination with a single subheading, as LIVER GLYCOGEN / biosynthesis, or LIVER GLYCOGEN / isolation.

Here are some popular pre-coordinations:

an organ + disease	STOMACH DISEASES
an organ + neoplasm	STOMACH NEOPLASMS
an organism + infection	STAPHYLOCOCCAL INFECTIONS
an animal + disease	DOG DISEASES
a disease + a site	HYPERTENSION, PORTAL

What are some others?

See page 95 for other examples of pre-coordinated diseases



## EXERCISE 10

## Coordination

One of the characteristics of MEDLARS is that we index as specifically as possible. Which of the coordinations below is the better choice, i.e., the more specific, for the concept to be indexed? Each of the combinations is a reasonable pairing of actual MeSH headings but since the exercise is designed for its logic in relation to specificity, just use your head: do not use MeSH.

- |    |    |  |                                    |                                   |
|----|----|--|------------------------------------|-----------------------------------|
| 1. | a. | LEG / injuries   | b.                                 | LEG INJURIES                      |
| 2. | a. | LEG<br>FRACTURES                                       | b.                                 | LEG INJURIES<br>FRACTURES         |
| 3. | a. | SALMONELLA<br>INFECTION                                | b.                                 | SALMONELLA INFECTIONS             |
|    |    | c.   | SALMONELLA<br>BACTERIAL INFECTIONS |                                   |
| 4. | a. | CORNEA<br>EYE INJURIES                                 | b.                                 | CORNEA / injuries<br>EYE INJURIES |
|    |    | c.   | CORNEA / injuries                  |                                   |
| 5. | a. | SPOROZOA<br>PROTOZOAN INFECTIONS                       | b.                                 | SPOROZOA<br>INFECTION             |
| 6. | a. | STAPHYLOCOCCAL INFECTIONS<br>PNEUMONIA                 |                                    |                                   |
|    | b. | STAPHYLOCOCCAL INFECTIONS<br>PNEUMONIA, STAPHYLOCOCCAL |                                    |                                   |
|    | c. | PNEUMONIA, STAPHYLOCOCCAL                              |                                    |                                   |
| 7. | a. | PNEUMONIA, VIRAL<br>ADENOVIRUS INFECTIONS              |                                    |                                   |
|    | b. | PNEUMONIA, VIRAL<br>ADENOVIRUSES                       |                                    |                                   |
| 8. | a. | PNEUMONIA, VIRAL<br>CAT DISEASES                       | b.                                 | PNEUMONIA, VIRAL<br>CATS          |







## Coordination

In the following titles, representative of the true content of the articles, what are the coordinates for the MeSH term indicated?

1. Determination of keratin in the cornea in corneal dystrophy  
KERATIN +
2. Lipase activity of the brain in brain tumors  
LIPASE +
3. The role of estrogen in ovarian diseases and pregnancy  
ESTROGENS +
4. The effect of hepatitis on liver metabolism in glucose-treated rats  
LIVER +
5. Effect of oral insulin on liver glycogen metabolism in x-irradiated mice  
INSULIN +
6. Liver catalase in meningitis; correlation with brain catalase  
CATALASE + ;  
BRAIN + .
7. Tooth structure in raccoons and its relation to cellulose digestion  
TOOTH +
8. Isolation of Salmonellae from the pancreas in diabetes; the metabolic effect of Salmonella infections of the pancreas in diabetes  
PANCREAS + ;  
SALMONELLA INFECTIONS +
9. Staphylococcal mastitis in Maryland cows; a recent epidemic  
MASTITIS, BOVINE + ;  
MARYLAND +





## EXERCISE 12

## Coordination

There are hundreds of pre-coordinated disease headings in MeSH. Often, however, COORDINATION is necessary to index an organ/disease concept correctly for diseases for which there is no pre-coordinated heading.

What are the correct coordinations for the following concepts in order to retrieve the disease concept adequately covered from both the organ and disease aspects? Do not use the ANNOTATED MeSH. Use the public MeSH which does not supply helpful annotations.

Indicate IM and NIM.

1. iris diseases
2. cystic duct diseases
3. corneal cancer
4. tibial diseases
5. pancreatic calculi
6. canine neoplasms
7. inflammation of the cervical vertebrae
8. gangrene of the left foot
9. staphylococcal infections of the stomach
10. gastric staph infections
11. corneal foreign bodies
12. diseases of the fingers
13. diseases of the muscles of the thigh
14. varices of the lower leg
15. diseases of the renal glomeruli



## QUALIFIERS (SUBHEADINGS)

In 1975 under MEDLARS II the descriptor commonly referred to in the past as "subheadings" was officially named "qualifier" and is so referred to in official documents and in the Annotated MeSH annotations. Since, however, page XXIX of the Annotated MeSH refers to "subheadings" and since the public MeSH on page IX calls them "subheadings" and since indexers and revisers daily call them "subheadings", this is how we shall refer to them during this course and in daily parlance.

- I. Purpose and need for subheadings
- II. Coordination: review
  - o definition & philosophy
  - o types
- III. History of subheadings at NLM
  - o pre-1954
  - o SHAL 1954
  - o MeSH 1960
  - o MeSH 1965-present
- IV. Subheading lists
  - o alphabetical list of abbreviations
  - o categorized list
- V. Form on the Data Form Field 21
- VI. Definition & use of subheadings by category
- VII. Common coordinations
- VIII. General rules
  - o main heading/subheading duplicates (INDEXING MANUAL 19.5)
  - o invalid main heading/subheading combinations (INDEXING MANUAL 19.6)
  - o permissible number for same main heading: 3 (INDEXING MANUAL 19.8)



- o treeing of subheadings (INDEXING MANUAL Figure 19.7)
- o coverage in the INDEXING MANUAL (Section 19) and in the ANNOTATED MeSH

#### IX. General reminders

- o index subheadings using only the categorized list of subheadings
- o always use the ANNOTATED MeSH for subheading permissions and restrictions for specific main headings
- o index a main heading with two or more subheadings IM only once (explain exceptions)
- o avoid nonsensical combinations even though a subheading is legal for a main heading by category (e.g., MILITARY SCIENCE / adverse effects -J1 / J1 - is silly)
- o check the INDEXING MANUAL, Section 19
- o use good sense
- o do not force a borderline or questionable subheading onto a main heading if there is any doubt: NOTHING is better than a WRONG SOMETHING



## SUBHEADINGS: HISTORY

## EFFECT OF SODIUM AND POTASSIUM ON LIVER METABOLISM OF GLUCOSE

1954-1959: LIVER - metabolism  
glucose, eff. of sodium & potassium

GLUCOSE - metabolism  
liver, eff. of sodium & potassium

SODIUM - effects  
on liver metab. of glucose

POTASSIUM - effects  
on liver metab. of glucose

1960-1962: LIVER - metabolism  
GLUCOSE - metabolism  
SODIUM - pharmacology  
POTASSIUM - pharmacology

1963-1965: LIVER SODIUM  
METABOLISM PHARMACOLOGY  
GLUCOSE POTASSIUM

Problem: Effect of glucose on liver metabolism of sodium

LIVER GLUCOSE  
METABOLISM PHARMACOLOGY  
SODIUM

Identical main headings in correct coordinations result  
in false drops

1966- LIVER / metabolism  
GLUCOSE / metabolism  
SODIUM / pharmacology (later / pharmacodynamics)  
POTASSIUM / pharmacology (later / pharmacodynamics)





\* Category A - Anatomy

abnorm	embryol	metab	rad eff
anal	enzymol	microbiol	radiogr
anat	growth	parasitol	radionuclide
blood supply	immunol	pathol	secret
class	inj	physiol	surg
cytol	innerv	physiopathol	transpl
drug eff			ultrastruct

\* see attached for subcategory restrictions

Category B - Organisms

anal (not B2)	drug eff (not B2)	isol (not B1, 2, 6)	pathogen (not B2, 6)
anat (not B3, 4)	embryol (not B3, 4, 5)	metab	physiol
blood (only B2)	enzymol (not B2)	microbiol (only B1, 2, 6)	rad eff (not B2)
class	genet	parasitol (only B1, 2, 6)	surg (only B2)
csf (only B2)	growth		ultrastruct (not B2)
cytol (not B2, 4)	immunol		urine (only B2)

Category C - Diseases

anal (only C4)	diet ther	microbiol	radionuclide
blood	drug ther	mortal	radiother
blood supply (only C4)	econ	nurs	rehabil
chem ind	embryol	occur	secret (only C4)
class	enzymol	parasitol	surg
compl	etiolo	pathol	ther
congen (not C16)	familial	physiopathol	transm
csf	hist	prev	ultrastruct (only C4)
diag	immunol	psychol	urine
	metab	radiogr	vet (not C22)



Category A - Anatomy

abnorm (not A10, 11, 12, 16)	metab
anal	microbiol
anat (not A11, 12)	parasitol
blood supply (not A7, 11, 12)	pathol (not A12)
class (A11 only)	physiol
cytol (not for subcellular terms)	physiopathol (not A11, 12)
drug eff	rad eff
embryol (not A11, 12, 16)	radiogr
enzymol	radionuclide
growth (not A10, 11, 12, 16)	secret
immunol	surg (not A11, 12)
inj (not A10, 11, 12, 16)	transpl
innerv (not A8, 10, 11, 12)	ultrastruct (not A12)



Category D - Chemicals & Drugs

admin	chem syn	immunol (not D25, 26)	rad eff
adv eff	class	isol	secret (not D25, 26)
anal	csf (not D25, 26)	metab	stand
analogs (not D8, 25, 26)	defic (not D25, 26)	pharm	supply
antag (not D25, 26)	diag use	physiol (not D25, 26)	ther use
biosyn (not D25, 26)	genet (only D6, 8-13, 24)	pois	tox
blood (not D25, 26)	hist		urine (not D25, 26)

Category E - Procedures & Techniques

adv eff	hist	methods	nurs	rehabil (only E4)	trends
class	instrum	mortal	psychol (not E7)	stand	util
econ	man (only E6)			supply	vet

Category F - Psychology & Psychiatry

	F1	educ (only SPEC)	physiol
class	F2	hist (only SPEC)	rad eff
drug eff		instrum (only SPEC)	

F3

blood	drug ther	metab	physiopathol
chem ind	econ	microbiol	prev
class	enzymol	mortal	psychol
compl	etiolo	nurs	rehabil
csf	familial	occur	surg
diag	hist	parasitol	ther
diet ther	immunol	pathol	urine



Category F - Psychology & Psychiatry (contd)

F4

adv eff	instrum	stand
class	man	supply
educ	methods	trends
hist	mortal	

Category G - Biological Sciences, Health Occupations, Environment, Biology & Physiology

anal (only G3)	hist (only G1-3)	rad eff (only G4-12)
class (all trees)	instrum (only G1-3)	stand (only G1-3)
drug eff (only G4-11)	man (only G1, 2)	trends (only G1-3)
educ (only G1-3)	methods (only G1-3)	util (only G1-3)
	prev (only G3)	

Category H - Physical Sciences

adv eff	hist	stand
class	instrum	supply
diag use	man	ther use
educ	methods	util

Category I - Social Sciences

class	man	stand
econ (only I2)	methods	supply
educ	organ (only I2)	trends
hist	prev (only I1)	util
legis (only I1, 2)		





Category J - Technology, Industry, Agriculture, Food

adv eff	hist	rad eff
anal	instrum	stand
class	man	supply
econ	methods	tox
educ (with discretion)	pois	util

Category K - Humanities

class	educ	hist
-------	------	------

Category L - Information & Communication

class	hist	man	stand
econ	instrum	methods	supply
educ	legis	organ	trends
			util

Category M - Named Groups

class	educ	hist	psychol
-------	------	------	---------

Category N - Health Care

class	legis (only N2, 3, 4)	stand
econ (only N2, 3, 4)	man (only N2, 3, 4)	supply (only N2, 3, 4)
educ (only N1, 2)	methods	trends
hist	organ (only N2, 3, 4)	util

Category Z - Geographic Names



## FORM OF SUBHEADINGS ON THE DATA FORM

\* indicates an IM heading or main heading/subheading combination

/ heralds a subheading

subheadings must be abbreviated

\* GOUT means GOUT is IM

GOUT means GOUT is NIM

GOUT / \* diag means GOUT with the subheading diagnosis is IM

GOUT / diag means GOUT with the subheading diagnosis is NIM

\* GOUT / diag means GOUT is IM without a subheading & GOUT / diagnosis is NIM

\* GOUT / \* diag is almost NEVER permitted

Note the spacing before and after the slash and before and after the asterisk. This is deliberate: it is thus easier for a reviser to read and to correct.



## SUBHEADINGS

## /metabolism

- o /metabolism may be used with the names of organs (Category A), names of organisms (Category B), names of diseases (Category C and F3) and names of drugs and chemicals (Category D).

PANCREAS / metabolism

SCHIZOPHRENIA / metabolism

HORSES / metabolism

BLOOD PROTEINS / metabolism

SALMONELLA / metabolism

CHLORPROMAZINE / metabolism

PANCREATITIS / metabolism

- o The following words appear in titles and texts frequently . In MEDLARS they are properly covered by the subheading /metabolism.

absorption

release

binding

secretion = /secretion

breakdown

splitting

conversion

storage

degradation

synthesis = /biosynthesis

distribution

transport

elimination (consider /urine) turnover

excretion (consider /urine) uptake

incorporation

utilization (but not the

mobilization

subheading /utilization)

pharmacokinetics

- o Note that concepts such as hydrolysis, oxidation, demethylation, deamination, alkylation, etc. would fall within the definition of /metabolism also if taking place in tissue. If taking place in a test tube, without tissue present, the concepts would be considered "chemical" rather than metabolic and /metabolism would not apply.

1950

Y. S. E.

## SUBHEADINGS AND COORDINATION

The coordination of a main heading and a subheading is the most popular type of coordination affecting the major user of MEDLARS, the user of INDEX MEDICUS.

We shall discuss subheadings the way we index: by pairing a main heading from a given category with the subheading available to that category, as

PEPTIC ULCER / chem ind

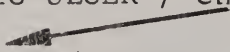
Category C      Category C


We shall discuss also with a given main heading/subheading combination from one category, the corresponding main heading/subheading combination from another tree or category, mandatory in accordance with our principle of coordination, as

PEPTIC ULCER / chem ind  
(C)                      (C)

ASPIRIN / adv eff  
(D)                      (D)

Note the coordinations below regardless of the category of the pair we coordinate first:

PEPTIC ULCER / chem ind  
  
ASPIRIN / adv eff

ASPIRIN / adv eff  
  
PEPTIC ULCER / chem ind

SCHIZOPHRENIA / drug ther  
PROMAZINE / ther use

PROMAZINE / ther use  
SCHIZOPHRENIA / drug ther

1977, 1978, 1979  
(1977) (1978) (1979)

(1977) (1978) (1979)  
(1977) (1978) (1979)

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1977, 1978, 1979

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1977, 1978, 1979

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## SUBHEADINGS

## Common Coordinations

The groups below are commonly met pairings of subheading combinations useful in retrievals. Add others to the list as you meet them.

(DISEASE A) /etiology	-where the cause-and-effect
(DISEASE B) /complications	relationship is known
(DISEASE A) /complications	-where the diseases are assoc-
(DISEASE B) /complications	iated but cause-effect is not
	stated
(DISEASE) /drug therapy	(DISEASE) /chemically induced
(DRUG) /therapeutic use	(DRUG) /adverse effects
(DISEASE) /pathology	(DISEASE) /etiology
(ORGAN) /pathology	(TECHNIC) /adverse effects
(DISEASE) /microbiology	(ORGAN) /drug effects
(ORGAN) /microbiology	(DRUG) /pharmacodynamics
(ORGANISM) /isolation &	
(ORGANISM) /drug effects	(ORGANISM) /metabolism
(DRUG) /pharmacodynamics	(DRUG) /metabolism
(ORGAN) /metabolism	(ORGAN) /analysis
(DRUG) /metabolism	(DRUG) /analysis
(DISEASE) /metabolism	(DISEASE) /metabolism
(ORGAN) /metabolism	(ORGAN) /analysis
(DRUG) /metabolism	(DRUG) /analysis
(ENZYME) /metabolism *	(ORGAN) /radiation effects
(ORGAN) /enzymology	specific radiation
(DISEASE) /enzymology	

\* or /blood, or /urine, or /cerebrospinal fluid, or  
/analysis



## EXERCISE 13

## Subheadings

Read through the alphabetical list of subheadings in the Introduction to MeSH. Concentrate only on the first two columns: the full subheading and the short form used in indexing. Ignore the other two columns.

Take particular notice of the double subheadings like "administration & dosage". These are to be interpreted as "administration and dosage" and as "administration or dosage".

Take also particular note of the logic of the short forms. They are so reasonable that you should have no trouble memorizing them in short order.

Here is an exercise to test the reasonableness of both the double subheadings and the short forms. Without first using the list, answer these questions. Later check yourself using it if you feel unsure.

1. What is the full subheading of these used by indexers:

/antag	/familial	/legis
/anat	/isol	/organ

2. Based on the full subheading alone, what subheading covers

control	inhibitors
development	distribution

3. What appears to be the rule for shortening subheadings ending in "-ology"?

4. What are the forms to be used on the Data Form for these subheadings:

/chemical synthesis	/pathogenicity
/drug effects	/radiography
/cerebrospinal fluid	/transmission

1. The structure of erythrocytes is determined by the presence of hemoglobin, which is a protein with four polypeptide chains (two  $\alpha$  and two  $\beta$ ) and four heme groups. The heme groups are responsible for the red color of the blood.

2. The function of erythrocytes is to transport oxygen from the lungs to the tissues. This is achieved by the binding of oxygen to the heme groups in hemoglobin.

3. The structure of erythrocytes is adapted for their function. They are biconcave discs, which increases their surface area for gas exchange. They also lack a nucleus, which allows them to carry more hemoglobin.

4. The life span of erythrocytes is approximately 120 days. After this time, they are removed from the circulation by the spleen and liver. The body replaces them by producing new erythrocytes in the bone marrow.

5. The production of erythrocytes is regulated by the hormone erythropoietin, which is produced by the kidneys in response to low oxygen levels in the blood.

6. The structure of erythrocytes is also adapted for their role in maintaining the pH of the blood. They contain a buffer system that helps to maintain a stable pH.

7. The structure of erythrocytes is also adapted for their role in maintaining the osmotic pressure of the blood. They have a high concentration of hemoglobin, which helps to maintain the osmotic pressure.

8. The structure of erythrocytes is also adapted for their role in maintaining the temperature of the blood. They have a high surface area, which allows them to exchange heat with the environment.

9. The structure of erythrocytes is also adapted for their role in maintaining the fluidity of the blood. They are flexible and can change shape to pass through narrow blood vessels.

10. The structure of erythrocytes is also adapted for their role in maintaining the viscosity of the blood. They have a high concentration of hemoglobin, which helps to maintain the viscosity.

## EXERCISE 14

## Subheadings

Using the subheadings available to Categories A, B and C, index the following titles which you will assume faithfully describe the content of the article. Use a Data Form for each title and mark all required check tags. Assume that the articles involved human beings (therefore you will check HUMAN) unless otherwise specified.

1. Agenesis of the lung
2. The isolation of Salmonellae from the colon
3. Surgery of intestinal neoplasms
4. Kidney function in the raccoon
5. Hand injuries in traffic accidents
6. Liver function in pancreatitis and hepatitis
7. Structure of erythrocytes in anemia
8. Determination of leukocyte phosphatase in agammaglobulinemia
9. Chemical composition of the lung in pneumonia
10. Uptake of iron by the liver and erythrocytes in hemochromatosis
11. Brain histology in multiple sclerosis
12. Metabolism of the cell wall of Mycobacterium tuberculosis in pulmonary tuberculosis
13. Electron microscopy of the normal cornea and the cornea in various eye diseases
14. X-ray diagnosis of knee injuries and their radiotherapy
15. Staphylococcal mastitis in Maryland cows; a recent epidemic
16. Isolation of Salmonellae from the pancreas in diabetes and the metabolic effect of Salmonella infections of the pancreas in diabetes
17. The origin, pathology and management of cancer
18. Chemistry and metabolism of the heart
19. Brain scan in the diagnosis of intracranial tumors
20. The psychology of the alcoholic and the alcoholic with cirrhosis





## EXERCISE 14 A

## Subheadings

The exercise below is designed to gain proficiency in the use of Category D subheadings. Index the following titles which you will assume to be a faithful representation of the content of the article. Each Category A, B, C term is a MeSH heading except those which are underlined, so it will not be necessary to use MeSH for any concepts except those underlined. In some cases you may want to repeat a main heading with two or more subheadings. Be sure to indicate, however, which must be IM and which must be NIM.

1. Plasma levels of prolactin during pregnancy
2. Talc-induced pulmonary granuloma
3. Combined action of ampicillin and chloramphenicol on Haemophilus influenzae
4. Technetium 99m bone scintigraphy in thyroid cancer
5. Measurement of tamoxiphen in serum by thin-layer chromatography
6. Effect of betamethasone on blood proteins
7. Prolonged administration of penicillins
8. Prolonged administration of massive doses of penicillin
9. Effect of prolonged administration of massive doses of penicillin
10. Liver lipase in hepatitis
11. Management of diabetes mellitus with oral antidiabetics
12. Protein polymorphism in Greeks
13. Regulatory role of peptide hydrolases in response to inflammation
14. Purification of mycotoxins
15. Antibodies to myelin proteins in the cerebrospinal fluid
16. Copper deficiency in anemia
17. Note on the first use of curare by South American Indians
18. Analysis of endorphins in the blood and cerebrospinal fluid; correlation with brain levels
19. Synthesis of lipopolysaccharides by Yersinia cell wall
20. Chemistry of scopolamine





## Subheadings

## Common Coordinations

Review page 63 of the Training Syllabus. Complete the following coordinations. Sometimes you are required to supply only one subheading, other times you are required to supply all. These "titles" below represent true content of "articles". For this exercise, however, do not concern yourself with complete indexing in regard to IM or NIM, check tags, etc.

1. Determination of penicillin levels in the liver:

PENICILLIN / anal  
LIVER /

2. Isolation of Klebsiella from the liver in amebic abscess of the liver:

KLEBSIELLA / isol  
LIVER /  
LIVER ABSCESS, AMEBIC /

3. Isolation of amebas from the liver in amebic abscess of the liver:

AMOEBA / isol  
LIVER /  
LIVER ABSCESS, AMEBIC /

4. Effect of pimelic acid on echo viruses:

PIMELIC ACIDS / pharm  
ECHOVIRUSES /

5. Pimelic acid metabolism in echo viruses:

PIMELIC ACIDS / metab  
ECHOVIRUSES /

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INFECTION

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6. Isomerase activity of the pancreas:  
ISOMERASES /  
PANCREAS /
7. Adenovirus infection and associated reovirus infection:  
ADENOVIRUS INFECTIONS /  
REOVIRUS INFECTIONS /
8. Response of streptococci to neomycin:  
STREPTOCOCCUS /  
NEOMYCIN /
9. Metabolism of digitalis glycosides in the liver in angina pectoris:  
DIGITALIS GLYCOSIDES / metab  
LIVER /  
ANGINA PECTORIS /
10. Effect of pregnancy on the virulence of staphylococci:  
PREGNANCY /  
STAPHYLOCOCCUS /
11. Pathology of the liver in hepatitis:  
LIVER /  
HEPATITIS /
12. Measles causing deafness:  
MEASLES /  
DEAFNESS /

1. The first of these is the

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13. Liver glycogen levels in hepatitis:

LIVER GLYCOGEN / anal  
HEPATITIS /

14. Liver catalase activity in hepatitis:

LIVER /  
CATALASE / metab  
HEPATITIS /

15. Ampicillin therapy of skin ulcers:

AMPICILLIN / ther use  
SKIN ULCERS /

16. Liver metabolism of catalase:

LIVER /  
CATALASE /

17. Ampicillin causing deafness:

DEAFNESS / chem ind  
AMPICILLIN /

18. Ampicillin causing abortion:

AMPICILLIN /  
ABORTION /

19. Effect of x-ray on the brain:

BRAIN /  
X-RAYS /

20. Schizophrenia in alcoholics:

SCHIZOPHRENIA /  
ALCOHOLISM /

IVIR : 4 years  
GOT : 4 years

o. LIVER : 4 years  
GOT : 4 years

c. LIVER : 4 years  
GOT : 4 years

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GOT : 4 years

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GOT : 4 years

## Subheadings

Select the correct MAIN HEADING / subheading combination:

1. Liver function in gout

- |   |  |
|---|--|
| a. LIVER / physiology<br>GOUT / physiology      | c. LIVER / physiopathology<br>GOUT / physiopathology |
| b. LIVER / physiology<br>GOUT / physiopathology | d. LIVER / physiopathology<br>GOUT / physiology      |

2. Measles in four brothers

- |                           |                                    |
|---------------------------|------------------------------------|
| a. MEASLES / transmission | c. MEASLES / familial &<br>genetic |
| b. MEASLES / genetics     | d. MEASLES / occurrence            |

3. Cytology of the dog lung

- |                                       |  |
|---------------------------------------|--|
| a. LUNG / cytology<br>DOGS / cytology | b. LUNG / cytology<br>DOGS / anatomy & histology |
|---------------------------------------|--|

4. Complications of hysterectomy

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| a. HYSTERECTOMY / adverse<br>effects | b. HYSTERECTOMY / complica-<br>tions |
|--------------------------------------|--------------------------------------|

5. DNA biosynthesis in Mycobacteria

- |  |
|--|
| a. DNA, BACTERIAL / biosynthesis<br>MYCOBACTERIUM / biosynthesis |
| b. DNA, BACTERIAL / metabolism<br>MYCOBACTERIUM / biosynthesis   |
| c. DNA, BACTERIAL / biosynthesis<br>MYCOBACTERIUM / metabolism   |

6. Nursing in gout

- |                                   |                              |
|-----------------------------------|------------------------------|
| a. GOUT / nursing                 | b. GOUT / nursing<br>NURSING |
| c. GOUT / nursing<br>NURSING CARE |                              |

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Dr. J. H. Hill

CONFIDENTIAL INFORMATION

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UNITED STATES DEPARTMENT OF AGRICULTURE

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THE UNIVERSITY OF CHICAGO

SECRET



7. Effect of streptomycin on *E. coli*
  - a. STREPTOMYCIN / drug effects  
ESCHERICHIA COLI / drug effects
  - b. STREPTOMYCIN / pharmacodynamics  
ESCHERICHIA COLI / drug effects
8. Taxonomy of ticks
  - a. TICKS  
CLASSIFICATION
  - b. TICKS / classification
9. Effect of promazine on appetite disorders
  - a. PROMAZINE / pharmacodynamics  
APPETITE DISORDERS / drug effects
  - b. PROMAZINE / pharmacodynamics  
APPETITE DISORDERS / drug therapy
  - c. PROMAZINE / therapeutic use  
APPETITE DISORDERS / drug therapy
10. Agenesis of the skin
  - a. SKIN / abnormalities
  - b. SKIN DISEASES / congenital
11. Bacillus infections
  - a. BACILLUS INFECTIONS
  - c. BACILLUS / pathogenicity
  - b. BACILLUS  
INFECTION
  - d. BACILLUS  
BACTERIAL INFECTIONS
12. A new technic for determining blood volume
  - a. BLOOD VOLUME DETERMINATION / methods
  - b. BLOOD VOLUME DETERMINATION / instrumentation
13. Personality dynamics in the paranoid
  - a. PERSONALITY / psychology  
PARANOIA
  - b. PERSONALITY  
PARANOIA / psychology

GOVERNMENT  
SECRET  
1948

ESCHERICH, ALFRED  
1948

ESCHERICH, ALFRED  
1948

ESCHERICH, ALFRED  
1948

ESCHERICH, ALFRED  
1948

## 14. Brain serotonin in gout

- |  |   |
|--|---|
| a. BRAIN CHEMISTRY<br>SEROTONIN / chemistry<br>GOUT / metabolism | b. BRAIN CHEMISTRY<br>SEROTONIN / analysis<br>GOUT / metabolism |
| c. BRAIN / analysis<br>SEROTONIN / analysis<br>GOUT / analysis   |   |

## 15. Effect of x-ray on E. coli

- |  |
|--|
| a. ESCHERICHIA COLI / radiation effects                      |
| b. ESCHERICHIA COLI<br>RADIATION EFFECTS                     |
| c. ESCHERICHIA COLI / radiation effects<br>RADIATION EFFECTS |

## 16. Effect of x-ray therapy of gout

- |                             |  |
|-----------------------------|--|
| a. GOUT / radiation effects | b. GOUT / radiation effects<br>RADIATION EFFECTS |
| c. GOUT / radiotherapy      | d. GOUT / radiotherapy<br>RADIOTHERAPY           |

## 17. Maximum safe dose of pargyline in dogs

- |                                |                          |
|--------------------------------|--------------------------|
| a. PARGYLINE / toxicity        | b. PARGYLINE / poisoning |
| c. PARGYLINE / adverse effects |                          |

## 18. Blood copper in hemosiderosis

- |  |   |
|--|---|
| a. COPPER / analysis<br>BLOOD CHEMICAL ANALYSIS<br>HEMOSIDEROSIS / blood | b. COPPER / blood<br>BLOOD CHEMICAL ANALYSIS<br>HEMOSIDEROSIS / blood |
| c. COPPER / blood<br>HEMOSIDEROSIS / blood                               |   |

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## 19. Influenza morbidity among American school children

- a. INFLUENZA  
MORBIDITY
- b. INFLUENZA / occurrence  
MORBIDITY

c. INFLUENZA / occurrence

## 20. Heart function in normal and tuberculous women

- a. HEART / physiology  
TUBERCULOSIS / physiology
- b. HEART / physiopathology  
TUBERCULOSIS / physiopathology  
HEART / physiology
- c. HEART / physiopathology  
TUBERCULOSIS / physiopathology

## 21. Urinary corticoids in gout

- a. GOUT / urine  
ADRENAL CORTEX HORMONES  
/ urine
- b. GOUT / urine  
ADRENAL CORTEX HORMONES  
/ urine  
URINE / analysis

## 22. Cortisone chemistry

- a. CORTISONE / chemistry
- b. CORTISONE  
CHEMISTRY

c. CORTISONE / analysis

## 23. Chest x-ray in pulmonary tuberculosis

- a. TUBERCULOSIS, PULMONARY  
THORACIC RADIOGRAPHY
- b. TUBERCULOSIS, PULMONARY / radiography  
THORACIC RADIOGRAPHY
- c. TUBERCULOSIS, PULMONARY / radiography

## 24. Kidney function in kidney disease

- a. KIDNEY / physiology  
KIDNEY DISEASES / physiology

1

Education

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- b. KIDNEY / physiology  
KIDNEY DISEASES / physiopathology
  - c. KIDNEY / physiopathology  
KIDNEY DISEASES / physiopathology
  - d. KIDNEY / physiopathology
- 25. Cardiology in the pharmacy student's curriculum
  - a. CARDIOLOGY / education  
PHARMACY / education
    - b. CARDIOLOGY / education  
EDUCATION, PHARMACY
    - c. CARDIOLOGY / education  
EDUCATION, PHARMACY  
CURRICULUM
    - d. CARDIOLOGY / education  
EDUCATION, PHARMACY  
CURRICULUM  
STUDENTS
- 26. Alabama needs more physicians
  - a. PHYSICIANS / manpower  
ALABAMA
    - b. PHYSICIANS / supply  
ALABAMA
- 27. Use of hospitals by Blue Cross members
  - a. HOSPITALS / utilization  
BLUE CROSS / utilization
    - b. HOSPITALS  
BLUE CROSS / utilization
    - c. HOSPITALS / utilization  
BLUE CROSS
- 28. The supply of dentists
  - a. DENTISTRY / manpower
    - b. DENTISTS / supply
- 29. The supply of osteopaths
  - a. OSTEOPATHY / manpower
    - b. OSTEOPATHS / supply
    - c. OSTEOPATHY / supply
- 30. Sanitation in the 21st century
  - a. SANITATION / trends
    - b. SANITATION  
FUTUROLOGY
    - c. SANITATION / trends  
FUTUROLOGY

1000 THERAPEUTIC  
JUNIOR, MEDICAL  
ALYLAND

rising cost of air conditioning in hospital

CONDOMINIUM  
HOSPITAL

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31. Legislation on therapeutic abortions in Maryland
  - a. ABORTION, THERAPEUTIC / legislation & jurisprudence  
MARYLAND
  - b. ABORTION, THERAPEUTIC  
LEGISLATION  
MARYLAND
  - c. ABORTION, THERAPEUTIC / legislation & jurisprudence  
LEGISLATION, MEDICAL  
MARYLAND
32. The rising cost of air conditioning in hospitals
  - a. AIR CONDITIONING  
ECONOMICS, HOSPITAL
  - b. AIR CONDITIONING / economics  
ECONOMICS, HOSPITAL
  - c. AIR CONDITIONING  
ECONOMICS, HOSPITAL  
MAINTENANCE, HOSPITAL / economics
  - d. AIR CONDITIONING  
MAINTENANCE, HOSPITAL / economics
33. Organization of an information service in a small drug manufacturing plant
  - a. INFORMATION SERVICES  
ORGANIZATION AND ADMINISTRATION  
DRUG INDUSTRY
  - b. DRUG INFORMATION SERVICES / organization & administration
  - c. DRUG INFORMATION SERVICES / organization & administration  
DRUG INDUSTRY
34. Liver scans in the diagnosis of liver tumors
  - a. LIVER NEOPLASMS / radionuclide imaging  
LIVER / radionuclide imaging
  - b. LIVER NEOPLASMS / diagnosis  
LIVER / radionuclide imaging
  - c. LIVER NEOPLASMS / radionuclide imaging

the correct as near as possible  
forms, always used by experts,  
addressing after a specific  
reason - merely mark a note at  
the of each wave, pattern to determine  
the relative

LASERS V  
REFLECTION, OCULAR V

4. Cellular resistance in different resistivity

CAPILLARY RESISTANCE V  
ELASTIC RESISTANCE V

5. Physical survey of strabismus in preschool children

STRABISMUS V

Determination of enzymes in villi and crypts of the  
small intestine

INTESTINE, SMALL V  
ALUMINUM PHOSPHATE V

6. The fine structure of the human skeleton

ATHLON V

6. Lipid patterns of crystals

LIPID V  
CYSTE V

7. Metabolic properties of neurons

CELLS V  
CYTOSOL V

8. Neurochemical interactions in the brain

NEUROCHEMISTRY V

8. Neurochemical interactions in the brain

NEUROCHEMISTRY V

## EXERCISE 17

## Subheadings

Supply after the / the correct subheading using the standard subheading short forms always used by indexers. If you feel you cannot use a subheading after a specific main heading - regardless of the reason - merely mark a zero after the / .

1. Use of laser wave patterns to determine refractive status

LASERS /  
REFRACTION, OCULAR /

2. Capillary resistance in diabetic retinopathy

CAPILLARY RESISTANCE /  
DIABETIC RETINOPATHY /

3. Statistical survey of strabismus in preschool children

STRABISMUS /

4. Determination of enzymes in villi and crypts of the rat small intestine

INTESTINE, SMALL /  
ALKALINE PHOSPHATASE /

5. The fine structure of the human atheroma

ATHEROMA /

6. The lipid patterns of cysts

LIPIDS /  
CYSTS /

7. Mast cell-depleting properties of neomycin

MAST CELLS /  
NEOMYCIN /

8. Survival of trypanosomes after rapid cooling

TRYPANOSOMA /

1. Diagnosis of lesion of the

KIDNEY NEOPLASIA  
SARCOMA  
PHILOGRAPHY

Section for horses

HORSES  
TREMEDICATION

Effect of autonomic ganglia

GANGLIA, AUTONOMIC

Classification of the jejunum

JEJUNUM  
GASTRIC

Effect of feeding, treatment

PERITONITIS, CONTACT  
WYLO

Classification of tuberculous lesions

RUBRA

Effect of insufficiency following heart surgery

PERITONITIS, INFLAMMATORY

Classification of chronic otitis media

Classification of chronic otitis media  
Classification of chronic otitis media

Classification of chronic otitis media

Classification of chronic otitis media

OTITIS MEDIA  
CHRONIC

18. Occurrence of tonsillitis

TONSILLITIS

9. Pulmonary thrombosis following nephrosis

PULMONARY EMBOLISM /  
NEPHROSIS /

10. Pyelographic diagnosis of sarcoma of the kidney

KIDNEY NEOPLASMS /  
SARCOMA /  
PYELOGRAPHY

11. Premedication for horses

HORSES /  
PREMEDICATION /

12. Classification of autonomic ganglia

GANGLIA, AUTONOMIC /

13. Giardiasis of the jejunum

JEJUNUM /  
GIARDIASIS /

14. Nylon causing dermatitis

DERMATITIS, CONTACT /  
NYLON /

15. Utilization of rubber in bacteriologic slides

RUBBER /

16. Respiratory insufficiency following heart surgery

RESPIRATORY INSUFFICIENCY /

17. Surgical possibilities in chronic otitis media

OTITIS MEDIA /  
CHRONIC DISEASE /

18. Occurrence of tonsillectomy in childhood

TONSILLECTOMY /

PROST

in space and

ALICE

REPORT SYSTEM

present and future of radio

RADIOGRAPHY

present and future of radiology

radiology

in practice

THE FUTURE OF RADIOGRAPHY

THE FUTURE OF RADIOGRAPHY

THE FUTURE OF RADIOGRAPHY

THE FUTURE OF RADIOGRAPHY

THE FUTURE OF RADIOGRAPHY

THE FUTURE OF RADIOGRAPHY

19. Chromosomal study of prostatic adenoma

PROSTATIC HYPERTROPHY /

20. Self-support systems in space vehicles

SPACE FLIGHT /  
LIFE SUPPORT SYSTEMS /

21. Past, present and future of radiotherapy

RADIOTHERAPY /

22. Past, present and future of radiology

RADIOLOGY /

23. Trends in fracture fixation

FRACTURE FIXATION /

24. Trends in fracture therapy

FRACTURES /

25. Cost-benefit analysis of security measures in hospitals

SECURITY MEASURES /  
COST BENEFIT ANALYSIS /

...covered by ...  
...direct subducing ...  
...all concepts ...  
...dexing.

...ology in nephritis;

4. Pancreatic disease in pancreatitis; PANCREATITIS

5. Pathology in chronic pancreatitis; PANCREATITIS

GALETTI

6. Best in the treatment of fracture; HEAT

7. Use of ultra-violet in the treatment of fracture

WILKINSON

8. Availability of radiologists in general RADIOLOGY

9. Availability of pharmacists in general PHARMACISTS

10. Glucose utilization in diabetes; DIABETES

11. Analysis of German literature; FORMULARIA

12. Condition of literature; CORRESPONDENCE

13. Chromatography with special reference to  
PHYSIOCHEMISTRY

14. Chromatography with special reference to  
PHYSIOCHEMISTRY

15. Chromatography with special reference to  
PHYSIOCHEMISTRY

16. Chromatography with special reference to  
PHYSIOCHEMISTRY

17. Chromatography with special reference to  
PHYSIOCHEMISTRY



## EXERCISE 18

## Subheadings

The concept underlined can be covered by a subheading. Supply the correct subheading after the main headings below. Obviously all concepts would be covered in indexing.

1. Kidney cytology in nephritis: KIDNEY /
2. Pancreatic lipase in pancreatitis: PANCREATITIS /
3. Gastritis pathology in German shepherd dogs:  
GASTRITIS /
4. Use of heat in the treatment of fractures: HEAT /
5. Use of ultrasonics in the study of headache:  
ULTRASONICS /
6. Availability of radiologists in Ghana: RADIOLOGY /
7. Availability of pharmacists in Ghana: PHARMACISTS /
8. Glucose utilization in diabetes: GLUCOSE /
9. Analysis of German formularies: FORMULARIES /
10. The functional role of cortisone: CORTISONE /
11. Diagnosis of hemochromatosis, with special reference to plasma proteins: HEMOCHROMATOSIS /
12. Cerebrospinal catalase in meningitis: MENINGITIS /
13. Effect of hepatitis on liver metabolism: HEPATITIS /
14. Tooth structure in raccoons and its relation to cellulose digestion: RACCOONS /



## EXERCISE 19

## Category N

Most indexing of MEDLARS material does not require the subtleties of use of Category N subheadings. Because of the importance of the delivery of health care and the MEDLARS data bases in this field, correct use of subheadings with N is important.

Here are titles taken from this type of literature. Try your hand at the subheadings available to N.

Usually only one or two elements of the title (and therefore of the article) has been chosen. In actual indexing complete coordination of all elements is required and each aspect must be covered by a main heading and pertinent subheadings. For example, item 4 would properly coordinate HOSPITALS, SPECIAL + BLUE CROSS.

1. Availability of services for nursing care of the sick at home  
HOME CARE SERVICES /
2. How can nursing care be measured?  
NURSING CARE /
3. Statistics on minority student nurses in associate degree programs in California  
STUDENTS, NURSING /
4. Utilization of special hospitals by Blue Cross members  
HOSPITALS, SPECIAL /
5. Need for pediatric nurses by 1980  
PEDIATRIC NURSING /
6. Continuing education courses for nurses in hospital administration  
HOSPITAL ADMINISTRATION /

THE NATIONAL BUREAU OF HEALTH

DEPARTMENT OF HEALTH

OFFICE OF THE ASSISTANT SECRETARY

WASHINGTON, D. C.

Field of research and

study

1918

DEPARTMENT OF HEALTH

WASHINGTON, D. C.

Report of the 18th Annual Convention of the

AMERICAN ASSOCIATION OF

Public Health Officials

1918

REPORT OF THE

COMMISSION ON THE ORGANIZATION OF

THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

1918

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

REPORT OF THE COMMISSION ON THE ORGANIZATION OF THE DEPARTMENT OF HEALTH

HEALTH AND VITAL STATISTICS

7. How professional is professional nursing?  
NURSING /
8. The Fairchild procedure in prenatal care  
PRENATAL CARE /
9. Pharmacy for the dental hygienist  
DENTAL HYGIENISTS /
10. Manpower in the field of dentistry and the relative percentage of dentists  
DENTISTRY /  
DENTISTS /
11. Housekeeping in the 18th century Bavarian hospital  
HOSPITAL HOUSEKEEPING /
12. Availability of electroencephalographic equipment in Ghana  
ELECTROENCEPHALOGRAPHY /
13. Effective use of the urban emergency service by rural fire departments  
EMERGENCY HEALTH SERVICES /
14. Kidney treatment problem readies HEW for national health insurance  
NATIONAL HEALTH INSURANCE, UNITED STATES /
15. Orthopedic operating room nurse clinicians  
ORTHOPEDICS /  
OPERATING ROOMS /  
NURSE CLINICIANS /
16. The alert cardiologist  
CARDIOLOGY /

COPIES OF THE  
REPORT

FOR THE YEAR 1961

CONTAINING  
THE RESULTS OF THE

RESEARCH IN THE  
FIELD OF

PHYSICS  
AND  
CHEMISTRY

OF THE  
INSTITUTE

OF  
TECHNOLOGY

17. Health care cost containment issues in U.S.: toward a unified theory of control

DELIVERY OF HEALTH CARE /  
COST MEASURES /

18. Geriatric clinics - their organization and tasks

GERIATRICS /  
OUTPATIENT CLINICS, HOSPITAL /

19. Variation in hospital charges: a problem in determining cost-benefit for cardiac surgery

HEART SURGERY /  
COST BENEFIT ANALYSIS /  
ECONOMICS, HOSPITAL /

20. Judicial review of internal policy decisions of private hospitals - a common law approach

HOSPITALS, PROPRIETARY /  
HOSPITAL ADMINISTRATION /





## TOOLS AND REFERENCES

## General Definition

## o Tools

minimal indispensable aids in the indexing operation.

## o Authorities

sources aiding in the indexing operation. Either definitions and explanations in the authority lead to correct indexing or its chapter and section headings themselves lead to MeSH terms.

## o References

sources which do not lead directly to actual headings but which are useful in clarifying information which in turn leads to correct indexing

## o Dictionaries

self-explanatory: the purpose of any dictionary is to define terms or, in the case of foreign language dictionaries, to give MEDLARS indexers English equivalents

It is the opinion  
of the Board  
that the  
Board of Directors  
is authorized to  
issue bonds to the  
amount of \$100,000.  
The Board of Directors  
is authorized to  
execute all such  
contracts as may be  
required by the Board.

THE  
OFFICE OF THE  
ATTORNEY GENERAL  
STATE OF NEW YORK  
ALBANY

## TOOLS AND REFERENCES

### MEDLARS

#### TOOLS

- o Annotated MeSH  
MeSH Tree Structures

This is the alpha and omega of our tools. All indexing and searching begins and ends with these MeSH authorities. Regardless of indexing policy in general or rules governing specific areas in particular, nothing can be generated except in terms of the headings created and defined by MeSH and MeSH products.

- o MEDLARS Indexing Manual

This was created to expound general indexing practices under MEDLARS, with rules to cover the philosophy of indexing from the descriptive and subject standpoints, with emphasis, naturally, on the subject aspects. Explanations of general theory on check tags, subheadings, IM vs NIM, degree of depth, organs, organisms, diseases, drugs and chemicals, physiological processes, technics and technologies, and paramedical areas, are meant to apply to most articles indexed and are meant to answer questions to most problems posed by indexing. Often, specific areas go into great detail but the Indexing Manual was designed primarily as the tool to cover indexing theory. It was designed to answer the question, "How do I handle .....?" where ..... is a concept rather than a specific heading. The handling of a specific heading is best directed by the Annotated MeSH.

- o Technical Notes  
Technical Notes: Supplements

This tool was designed to discuss practices relating to groups of concepts, lying half-way between the general-

These are sources which in 1970 indicated a crowd  
of arriving at a concert and singing "I Just"  
resembling a list dated earlier than the FBI.  
PHY published by MASH in the introduction to the  
document presented to the FBI (the list does  
not in the Associated Press). For example,  
in this, we reason, it might be Manual of Psychology  
on the basis of the authority upon which

ities of the Indexing Manual and the specificities of the MeSH annotations. While the general approach to a subject may appear in the Indexing Manual, in a Technical Note the subject may be discussed at much greater length with possible application to individual concepts not able to be covered with relative brevity in the Indexing Manual.

The Technical Notes: Supplements constitute amplifications of both indexing policy from the manual and discussions in the Technical Notes themselves. For example, Technical Notes: Supplement 230: Blood Groups is a 31-page amplification of Technical Note 230 giving specific indexing instructions on blood-group symbols found in immunohematological literature.

#### o Technical Memoranda

Unlike Technical Notes which have wide distribution to searchers and other users of INDEX MEDICUS and its products, these are issued only to indexers. They usually contain notices of indexing errors and instructions to improve indexing consistency.

### AUTHORITIES

These are sources which MeSH and indexers draw upon in arriving at a correct indexing term. Instead of presenting a list here, we refer you to the BIBLIOGRAPHY published by MeSH in the Introduction to the annual MeSH presented to the public (the list does not appear in the Annotated MeSH). For example, in indexing bacteria, we resort to Bergey's Manual of Determinative Bacteriology for that is the authority upon which MeSH bases its bacteria headings.

### REFERENCES

These are texts in the Index Section reference collection which indexers use in guiding them to available MeSH terms. They are not listed among the authorities (bibliography) in MeSH, but are reputable reference books and textbooks on whose content an indexer can base a decision in selecting a MeSH heading. May's Diseases of the Eye is a good example.



## INDEXING MANUAL

- I. Purpose
- II. General plan
- III. Indexing theory
  - o article selection
  - o article examination
  - o depth of indexing
  - o IM and NIM
- IV. MeSH
- V. Descriptive indexing
- VI. Check Tags
- VII. Subheadings
- VIII. Indexing principles by category
- IX. Index





## ANALYSIS OF MeSH TREES

This lecture will be given with two texts in hand: MeSH TREE STRUCTURES and TREE ANNOTATIONS.

The TREE ANNOTATIONS give many of the points to be discussed or mentioned during these lectures. It may not be necessary, therefore, to keep detailed notes on class lectures on the analysis of Trees.

### I. Purpose

- o to show coverage of the specific tree
- o to show subheading restrictions for the specific tree
- o to show major indexing principles governing headings in the specific tree
- o to point out salient features of the specific tree
- o to point out interesting headings in the specific tree

### II. Limitations

The lectures on the MeSH categories and trees can touch only lightly on the boundless implications of the headings and their use. The lectures can never be complete and can offer only a glimpse of what will confront the indexer or searcher after the training period.

### III. Coordination

While a main heading/subheading combination is the commonest type of coordination, it should be pointed out that a main heading/subheading combination from one category is almost always coordinated with a main heading or a main heading/subheading combination from another category. See page 62.

For example, with a Category A combination like LIVER / microbiology, the expected coordination from Category B is a B micro-organism paired with /isolation or from Category C, a microbial disease. Likely coordinations will be pointed out during the category or tree analysis.

... of medical research ...  
... of medical research ...  
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... of medical research ...  
... of medical research ...

... RESPIRATORY ...

... -specific ...

1977

21  
F.  
1977

## INDEXING PRINCIPLES BY CATEGORY

### I. Basic indexing principle: general vs specific

The first principle of indexing for MEDLARS is this: Index as specifically as possible. Stated another way the principle reads: Do not index under a general term when the article discusses the specific.

Although MeSH is replete with general terms under which are indented specific terms, the indexer must make a choice to cover faithfully the content of an article. He does not use PNEUMONIA when the author is discussing LUNG DISEASES in general. But in actual practice, with the state of medical research reaching out ever toward specific causes and effects, most literature we see as indexers tends to discuss specifics. Statistically he is called upon more often to account for specific lung diseases, for example, than for lung diseases in general.

### II. Laboratory example

- o Turn to Tree A4 - ANATOMY - RESPIRATORY SYSTEM
- o Viewed as general-vs-specific, here are other possible arrays:

RESPIRATORY SYSTEM		LARYNX
LARYNX		GLOTTIS
LUNG	or	LARYNGEAL CARTILAGES
NOSE		
PARANASAL SINUSES		
PLEURA		
TRACHEA		

- o The indexer must give thought to each array - general or specific - in relation to the article in hand or each segment of the article in hand.

Page 10 of 10

1. The first of these is the fact that the
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### III. General observations

- o general headings tend to be in Priority 3, non-research journals
- o specific headings tend to be in Priority 1 and 2, research-oriented journals
- o indexers index as specifically as possible: in this way only can a searcher retrieve both the specific and the general

If an indexer indexes an article on streptomycin as STREPTOMYCIN, a searcher can retrieve this two ways. If a requester wants only STREPTOMYCIN, the article is retrieved as STREPTOMYCIN. If a requester wants all ANTIBIOTICS, the searcher can retrieve the STREPTOMYCIN article by asking the computer for every article indexed under ANTIBIOTICS and every specific heading indented under it by a device called an explosion. If the indexer has indexed STREPTOMYCIN under the general term ANTIBIOTICS, then a searcher would never retrieve it if the requester had stated that he didn't want any article on any antibiotic: he wanted only STREPTOMYCIN.

- o MeSH attempts to provide more specific headings as time goes on because
  - many headings frequently encountered in the large volume headings contain too much material to be perused easily
  - the demands of the various specialties become increasingly specific



## CATEGORY A

- o Category A contains anatomical terms referring to both humans and animals. Almost all the headings referring to humans can be used with animals, but the headings in Tree A13 refer exclusively to animals.
- o There are many subheadings available to this category and they seldom give any difficulty in pairing with anatomical terms.





## CATEGORY B

- o Category B contains the headings for living organisms.
- o The terms in B2 figure predominantly as the animal used in animal experiments (and hence exist on the data form as Check Tags) and in veterinary literature. Review the rules for IM vs NIM in this area.
- o There are many subheadings available to this category and they seldom give trouble in coordinating with the B main heading.



## EXERCISE 20

## Bacteria

Using Bergey as an authority, determine the correct MeSH heading for the terms below, supposedly found in articles to be indexed:

1. Bacillus tuberculosis
2. acidophilus bacilli
3. Micrococcus pyogenes
4. Peptostreptococcus elsdenii
5. Bacterium cassavae
6. Xanthomonas vignicola
7. Streptomyces africanus
8. Bacillus shigae
9. Eberthella viscosa
10. Heteromyces



## EXERCISE 21

## Viruses

Using Andrewes' VIRUSES OF VERTEBRATES  
determine the MeSH headings for

1. Negishi virus
2. Myrmecia virus
3. Ebola virus
4. tern virus ic virus
5. feline ataxia virus
6. Yucaipa virus
7. trachoma virus
8. gecko virus
9. Visna virus
10. epidemic gastroenteritis virus
11. exanthema subitum virus
12. hydrophobia virus
13. papilloma virus of rabbits



## EXERCISE 22

## Fungi

Using Ainsworth & Bisby's Dictionary of the Fungi, together with the FUNGUS KEY, determine the correct MeSH heading for the fungi below, supposedly found in articles to be indexed:

1. Diploospora
2. Mucedo
3. Pullularia
4. Auricularia
5. Heteromyces
6. Ascomycotina
7. Trullula
8. Placynthium
9. sclerotia
10. Tuber





## CATEGORY C

- o Category C, names of diseases, is the second largest category (only D is larger).
- o It is arranged in the order of the "popularity" of disease types: infections first, cancer second, then diseases loosely following the systemic arrangement corresponding to the anatomic systems in Category A, then specialized areas of disease types, and last, general pathological processes which merit special attention.
- o Study page 95 for the types of diseases in MeSH. Note particularly the emphasis on pre-coordination and the indexing practice regarding IM and NIM.
- o There are many subheadings available to this category and their use is frequent and fairly standard.



## TYPES OF DISEASE

## 1. pre-coordinated organ/disease term:

BRAIN DISEASES      BREAST DISEASES      SKIN DISEASES

## 2. pre-coordinated organism/disease term:

SALMONELLA INFECTIONS      ADENOVIRUS INFECTIONS  
TRYPANOSOMIASIS

## a. usually requires coordination with organ/disease:

STREPTOCOCCAL INFECTIONS  
LIVER DISEASES

b. many such relationships are inflammatory diseases  
(      -ITIS):

STAPH INFECTIONS      for staphylococcal peritonitis  
PERITONITIS

## 3. pre-coordinated organ/organism/disease term:

TUBERCULOSIS, ENDOCRINE (IM)  
to be coordinated with specific endocrine term:  
ADRENAL GLAND DISEASES (IM)

## 4. organ + pre-coordinated organ/disease term:

ILEUM (IM)      for ileal diseases  
INTESTINAL DISEASES (NIM)

CONJUNCTIVA (IM)      for conjunctival diseases  
EYE DISEASES (NIM)

## 5. specific disease names, descriptive:

CRANIOFACIAL DYSOSTOSIS      HEMORRHAGIC DIATHESIS  
AGRANULOCYTOSIS      KIDNEY FAILURE, ACUTE  
POLIOMYELITIS

## 6. syndromes:

descriptive:      CRYING CAT SYNDROME  
eponymous:      KIMMELSTIEL-WILSON SYNDROME



## INFECTION

- o Definition of "INFECTION"
- o Use in MEDLARS
- o "Infectious diseases" as INFECTION (note singular)  
or COMMUNICABLE DISEASES
- o Types of infection headings in MeSH
  - pre-coordinated general (BACTERIAL INFECTIONS;  
VIRUS DISEASES; PARASITIC DISEASES)
  - pre-coordinated specific (BORDETELLA INFECTIONS;  
ADENOVIRUS INFECTIONS)
  - historical or classical (Pasteurella pestis in-  
fection = PLAGUE; Clostridium botulinum in-  
fection = BOTULISM. See MeSH and INDEXING  
MANUAL 23.5.1 for others)
  - derivative (SCHISTOSOMIASIS; ECHINOCOCCOSIS)
  - required coordinations  
disease heading available but not the organism  
organism heading available but not the disease
- o Relation to / microbiology and /isolation & purification
- o Relation to / pathogenicity



## NEOPLASMS

## I. General

The terms "tumor" and "cancer" are used interchangeably in MEDLARS and both are synonyms for "neoplasm" or "neoplastic disease." No distinction is made at present between the malignant or benign pathology of the neoplasms.

Granulomas and cysts are not considered neoplasms but are coordinated with the pre-coordinated organ/disease headings.

"Carcinoma" as a term should be examined to see whether it is a true histological type or merely a sophisticated synonym for "cancer". If the latter, it is ignored.

## II. Indexing policy

Index every neoplasm at least two ways:

1. under the histological type
2. under the site

Choose the histological type (SARCOMA; ASTROCYTOMA; CARCINOMA, DUCTAL; CARCINOMA, SCIRRHOUS; &c.) from the directions given in the Index Section's TUMOR KEY as based on the tumor classification of the American Cancer Society.

Choose the site heading from among the pre-coordinated organ/neoplasm headings in MeSH in Tree Structure C4: BREAST NEOPLASMS, STOMACH NEOPLASMS, GASTROINTESTINAL NEOPLASMS, BRAIN NEOPLASMS, &c.

Examples:

Basal cell carcinoma of the skin

Site: \* SKIN NEOPLASMS

Hist: \* CARCINOMA, BASAL CELL

Basal cell carcinoma of the skin of the forearm

Site: \* SKIN NEOPLASMS

Coord: \* FOREARM

Hist: \* CARCINOMA, BASAL CELL





Surgical approach in astrocytoma of the temporal lobe:

Site: BRAIN NEOPLASMS / \* surg  
Coord: \* TEMPORAL LOBE  
Hist: ASTROCYTOMA / \* surg  
(METHODS)

### III. References

- o MeSH Tree C4
- o MEDLARS INDEXING MANUAL, Section 24
- o TECHNICAL NOTES SUPPLEMENT: TUMOR KEY

### IV. Alphabetical MeSH

The lecturer will discuss the array of neoplasm headings available in MeSH in the alphabetical listing starting with NEOPLASM --- : the meaning of the various terms and significant coordinations.



## EXERCISE 23

## Neoplasms

## Tumor Key

Using the TECHNICAL NOTES SUPPLEMENT: TUMOR KEY, index these neoplasms as histological types only. Do not concern yourself with the organ/neoplasms heading also required in indexing cancer, since this part of the exercise was designed to acquaint you with the Tumor Key, not to ask you to practice indexing policy.

- |                                |                                 |
|--------------------------------|---------------------------------|
| 1. androblastoma               | 6. giant cell carcinoma         |
| 2. malignant androblastoma     | 7. epidermoid carcinoma in situ |
| 3. endothelial sarcoma         | 8. oat cell carcinoma           |
| 4. transitional cell carcinoma | 9. angiomyolipoma               |
| 5. hepatoma                    | 10. neurinoma                   |

Using the TUMOR KEY again, index these neoplasms under both the histological type and the required organ/neoplasms coordinates. This part of the exercise was designed to allow you to familiarize yourself with the requisites in cancer indexing at the elementary level.

11. fibroblastic osteosarcoma of the femur head
12. astroglioma of the frontal lobe
13. bile duct carcinoma
14. uterine fibroma
15. hepatoma
16. giant cell carcinoma of the forearm
17. laryngeal papilloma
18. oat cell carcinoma of the lung
19. carcinoma of the breast
20. malignant tumors of the neck
21. tumors of the fingers
22. carcinoma of the testis in dogs



## EXERCISE 23 A

## Neoplasms

Using a data form, index the following titles. The purpose of the exercise is the use of main headings and subheadings particularly seen in cancer articles. You will be responsible for proper coordinations and all check tags.

1. Sequential polychemotherapy for advanced prostatic carcinoma. A preliminary cooperative study on 30 patients.
2. Pigment in the lining of nasolacrimal duct cysts: report of 2 cases.
3. Immunologic manipulation of DMBA tumorigenesis in hamster cheek pouch by DNCB contact hypersensitivity.
4. Sublingual keratosis and malignant transformation.
5. Differentiation of benign and malignant human lymph nodes.
6. 5-Fluorouracil, adriamycin and mitomycin-C chemotherapy for adenocarcinoma of the lung.
7. Complete remission of widely metastatic endometrial stroma sarcoma following combination chemotherapy.
8. Results of radiotherapy in control of stage I and II non-Hodgkin's lymphoma.
9. Radiation management of carcinoma of the cervical stump.
10. Effect of irradiation on mixed muellerian tumors of the uterus.
11. Clear cell carcinoma of the endometrium.
12. Multiple myeloma masquerading as chromophobe adenoma.



## FISTULA

- I. Under FISTULA in MeSH, observe the see related headings which represent all the fistulas in MeSH arranged alphabetically.

With these in hand, create a tree with proper indentions for

- o all the intestinal fistulae
- o all the urinary fistulae
- o all the fistulae of interest to dentists

II. Sample indexing: Gastrojejunocolic fistula

Principle: Cover each element from the viewpoint of the anatomical site and the fistula making each IM.

gastro + jejuno + colic + fistula

- \* GASTRIC FISTULA
- \* JEJUNAL DISEASES
- \* INTESTINAL FISTULA
- \* COLONIC DISEASES



The arrows show the coordinations.

- III. See the MEDLARS INDEXING MANUAL for a very complete coverage of the indexing of fistulae (section 23.25).

- IV. Using the formula in II. above, index these:

- o cholecystoduodenal fistula
- o vesicovaginorectal fistula
- o esophagotracheal fistula
- o renopulmonary fistula
- o uterine fistula





## MANIFESTATIONS

EYE MANIFESTATIONS  
 NEUROLOGIC MANIFESTATIONS  
 ORAL MANIFESTATIONS  
 SKIN MANIFESTATIONS

- o only these 4 are in the system
- o differentiate these from EYE DISEASES, SKIN DISEASES, etc.
- o use EYE MANIFESTATIONS with only NON-eye diseases, use SKIN MANIFESTATIONS with only NON-skin diseases, etc.

EYE MANIFESTATIONS  
 PEPTIC ULCER

never EYE MANIFESTATIONS  
 CONJUNCTIVITIS

- o these 4 never take subheadings
- o these 4 are almost never used for depth indexing or for indexing Priority 1 & 2 journals
- o while these 4 are supposed to be used discreetly by indexers, they should be searched during an organ/disease search

See the next page for an exercise on these manifestation headings. The citations actually appeared in INDEX MEDICUS. Some are right, some are wrong. Which are wrong and why?



## EXERCISE

## Manifestations

## SKIN MANIFESTATIONS

- 1 Comparison of the finger wrinkling test results to established sensory tests in peripheral nerve injury Phelps PE, et al. *Am J Occup Ther* 31(9):565-72, Oct 77
- 2 Chronic cutaneous graft-versus-host disease in man Shulman HM, et al *Am J Pathol* 91(3):545-70, Jun 78
- 3 Angioimmunoblastic lymphadenopathy A generalized lymphoproliferative disorder with cutaneous manifestations Matloff RB, et al *Arch Dermatol* 114(1):92-4, Jan 78
- 4 Skin lesions in paroxysmal nocturnal hemoglobinuria Rietschel RL, et al *Arch Dermatol* 114(4):560-3, Apr 78
- 5 The glucagonoma syndrome A distinctive cutaneous marker of systemic disease Swenson KH, et al *Arch Dermatol* 114(2):224-8, Feb 78
- 6 The cutaneous manifestations of sinus histiocytosis with massive lymphadenopathy Thawerani H, et al *Arch Dermatol* 114(2):191-7, Feb 78
- 7 Skin tags and diabetes [letter] Tompkins RR. *Arch Dermatol* 113(10):1463, Oct 77
- 8 Cutaneous manifestations of brucellosis Rigatos GA, et al *Br J Clin Pract* 31(10):167, Oct 77
- 9 Inflammatory bowel disease cutaneous manifestations Vreeken J, et al *Compr Ther* 4(7):20-4, Jul 78
- 10 Cutaneous manifestations of gastrointestinal disease Loeffel ED, et al *Cutis* 21(6):852-61, Jun 78
- 10 Cutaneous manifestations of pancreatic diseases Sibrack LA, et al *Cutis* 21(6):763-8, Jun 78
- 11 Skin manifestations of leukemias and lymphomas Stawiski MA *Cutis* 21(6):814-8, Jun 78
- 11 The swollen limb cutaneous clues to diagnosis and treatment Taylor JS, et al *Cutis* 21(4):553-60, Apr 78
- 12 Skin manifestations in acute lymphatic leukemia Arneric S, et al *Dermatologica* 155(1):61-4, 1977
- 13 Cutaneous signals of host-defense failure Hong R, et al *Int J Dermatol* 16(8):627-39, Oct 77 (54 ref)
- 14 Dermatologic abnormalities associated with gastrointestinal malignant and premalignant diseases Kurtz RC, et al *Int J Dermatol* 17(1):14-9, Jan-Feb 1978
- 15 Sign of Leser-Trélat [letter] Brown FC *JAMA* 239(10):929-30, 6 Mar 78
- 16 Dermatologic manifestation of viral hepatitis [letter] Pollock JL *N Engl J Med* 299(9):488, 31 Aug 78
- 17 Acute arthritis and subcutaneous fat necrosis as the first manifestation of pancreatic disease Kreeftenberg HG, et al *Neth J Med* 21(1):23-7, 1978
- 18 Cutaneous manifestations of the rheumatic diseases Gilkes JJ *Practitioner* 220(1315):68-72, Jan 78
- 19 Cutaneous lesions of sarcoidosis Elgart MI. *Primary Care* 5(2):249-62, Jun 78
- 20 Cutaneous signs of internal malignant disease Sibrack LA. *Primary Care* 5(2):263-80, Jun 78
- 21 [Sarcoidosis with extensive ulcerating and atrophying cutaneous manifestations (of the Pick-Herxheimer type) and with cardiac and muscular involvement About one case (author's transl)] Chevrant-Breton J, et al *Ann Dermatol Venerol* 104(12):72-81, Dec 77 (Eng Abstr) (Fre)

## EYE MANIFESTATIONS

- 1 Optic disk neovascularization in hemoglobin SC disease Ober RR, et al *Am J Ophthalmol* 85(5 Pt 1):711-4, May 78
- 2 Ocular manifestations of group A Niemann-Pick disease Walton DS, et al *Am J Ophthalmol* 85(2):174-80, Feb 78
- 3 Werner's classification of ocular changes in Graves's disease a review Lyle WM *Am J Optom Physiol Opt* 55(2):119-27, Feb 78 (54 ref)
- 4 Graves' hyperthyroidism Spontaneous occurrence after autoimmune hypothyroidism with persistent infiltrative ophthalmopathy Sung LC, et al *Arch Intern Med* 138(6):1009-10, Jun 78
- 5 The disc sign in sickling hemoglobinopathies Goldbaum MH, et al *Arch Ophthalmol* 96(9):1597-600, Sep 78
- 6 Late ocular manifestations in neonatal herpes simplex infection Tarkkanen A, et al *Br J Ophthalmol* 61(9):608-16, Sep 77
- 7 Ocular manifestations in bullous dermatoses Venugopal NS, et al *Indian J Ophthalmol* 25(1):13-7, Apr 77
- 8 Neuromuscular diseases that affect the eye Black JT *Int Ophthalmol Clin* 18(1):83-121, Spring 78 (90 ref)
- 9 Transient ocular bobbing in a case of brain stem encephalitis Nair KR, et al *J Assoc Physicians India* 25(8):573-5, Aug 77
- 10 Ocular manifestations of pharyngomyositis in a diabetic Maltzman BA, et al *J Med Soc NJ* 75(7):519-22, Jul 78
- 11 Ocular manifestations of the rheumatic diseases Hazleman BL *Practitioner* 220(1315):83-91, Jan 78
- 12 A preliminary survey of atopic Mooris Potter D, et al *Trans Ophthalmol Soc NZ* 29:113-7, 1977
- 13 Neurological and related manifestations of cysticercosis Vijayan GP, et al *Trop Geogr Med* 29(3):271-8, Sept 77
- 14 [Eye manifestations of Horton's disease Apropos of 44 cases] Adenis JP, et al *Bull Soc Ophthalmol Fr* 77(2):201-5, Feb 77 (Eng Abstr) (Fre)
- 15 [Ocular manifestations in Takayasu-Onishi disease] Arne JJ, et al *Bull Soc Ophthalmol Fr* 77(8-9):865-6, Sep-Oct 78 (Fre)
- 16 [Eye manifestations in colibacillus septicemia] Arnoux M, et al *Bull Soc Ophthalmol Fr* 76(12):1213-4, Dec 77 (Fre)
- 17 [Value of the study of evoked visual potentials in multiple sclerosis] Chevaleraud JP, et al *Bull Soc Ophthalmol Fr* 77(8-9):885-8, Sep-Oct 78 (Fre)
- 18 [Eye manifestations of Wilson's disease] Le Rebeller MJ, et al *Bull Soc Ophthalmol Fr* 77(2):173-6, Feb 77 (Fre)
- 19 [The neuro-ophthalmological symptomatology in case of cerebellar pathology (author's transl)] Safran AB, et al *J Fr Ophthalmol* 1(4):275-81, Apr 78 (50 ref) (Eng Abstr) (Fre)
- 20 [Eye symptoms in relapsing polychondritis (author's transl)] Cuendet JF *Klin Monatsbl Augenheilkd* 172(4):602-3, Apr 78 (Eng Abstr) (Fre)

## NEUROLOGIC MANIFESTATIONS

- 1 Neuropsychological findings with pseudoxanthoma elasticum Heaton RK, et al *Acta Med Scand* 203(s):215-21, 1978
- 2 Neurological complications of beta-thalassaemia major Sinniah D, et al *Arch Dis Child* 52(12):977-9, Dec 77
- 3 Cellular hyperviscosity as a cause of neurological symptoms in leukaemia Preston FE, et al *Br Med J* 1(6111):476-8, 25 Feb 78
- 4 Infectious mononucleosis dominated by neurologic symptoms and signs Schlesinger RD, et al *Can Med Assoc J* 117(6):652-3, 17 Sep 77
- 5 Metastatic cystosarcoma phylloides A report of 2 cases presenting with neurological symptoms Rhodes RH, et al *Cancer* 41(3):1179-87, Mar 78
- 6 The neurological manifestations of chronic inhalation of leaded gasoline Seshia SS, et al *Dev Med Child Neurol* 20(3):323-34, Jun 78
- 7 Retrorectal abscess with neurologic involvement of the lower extremities report of a case Shuh HA, et al *Dis Colon Rectum* 20(6):528-31, Sep 77
- 8 Neurological features as presenting manifestations of brucellosis Abramsky O *Eur Neurol* 15(5):281-4, 1977
- 9 Neurological manifestations of frost-bite Suri ML, et al *Indian J Med Res* 67:292-9, Feb 78
- 10 Neurological manifestations of three organophosphate poisons Wadia RS, et al *Indian J Med Res* 66(3):460-8, Sep 77
- 11 Neurologic manifestations of monoclonal IgM gammopathy associated with lymphocytic leukemia in a dog Braund KG, et al *J Am Vet Med Assoc* 172(12):1407-10, 15 Jun 78
- 12 A profile of snake bite poisoning with special reference to haematological, renal, neurological and electrocardiographic abnormalities Sarangi A, et al *J Assoc Physicians India* 25(8):555-60, Aug 77
- 13 Neurodiagnostic abnormalities in patients with acute renal failure Cooper JD, et al *J Clin Invest* 61(6):1448-55, Jun 78
- 14 Acute leukaemia presenting with neurological manifestations without any evidence of systemic disease Majumdar G, et al *J Indian Med Assoc* 70(2):41-2, 16 Jan 78



## CATEGORY D (Chemicals and Drugs)

## I. Definitions

- o a chemical
- o a drug
- o an endogenous substance
- o an action group
- o anything in Category D

## II. Arrangement of D subcategories

- o chemical rationale
- o medical rationale
- o category rationale
- o indexing rationale

## III. Subheadings

- o general policy
- o review of commonly used & significant subheadings with Category D terms
- o special emphasis on /ad-poi-tox
- o application by subcategory
- o Indexing Manual & Annotated MeSH permissions & restrictions
- o multiple subheadings

## IV. Analysis by subcategory

- o over-all coverage of the subcategory
- o groupings within
- o detailed analysis of significant groupings
- o applicable subheadings

## V. Indexing policy

- o if in MeSH, use the MeSH term
- o if not in MeSH, index by action group & submit to Chemical Specialist
- o enzymes
- o isotopes, radioactive isotopes & radioactive elements

## VI. INDEXING QUERY--CHEMICAL form

- o when to fill out
- o how to fill out
- o disposition



## CHEMICAL INDEXING

The majority of chemicals is indexable using MeSH. An INDEXING QUERY--CHEMICAL form will be submitted for those chemicals and drugs not able to be handled thus or those about which the Indexer is doubtful.

Here are some useful additional data you should remember as general principles in indexing chemicals. They are reminders of recurring concepts.

"the chemistry of indoles"	* INDOLES CHEMISTRY
"the chemical structure of indoles"	* INDOLES CHEMISTRY
"chemical analysis of indoles"	
if on the structure of indoles	* INDOLES CHEMISTRY
if on the determination of indoles in a tissue, body fluid, etc.	INDOLES /* analysis
"chemical determination of indole in indoleacetic acid"	* INDOLES (/analysis) * INDOLEACETIC ACID CHEMISTRY

## MODELS, CHEMICAL

A theoretical discussion of the chemical nature (structure, position, configuration, physical properties, etc.) - known or theorized. It is merely a useful pre-coordination of CHEMISTRY + MODELS, THEORETICAL

## MOLECULAR MODELS

NEVER indexed unless the article shows a photograph of a 2- or 3-





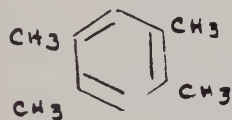
dimensional representation.  
The DNA tinker-toy chandelier  
in the catalog area is MOLECULAR MODELS, NOT MODELS, THEORETICAL.

CHEMISTRY, ANALYTICAL

This = /analysis. It is a specialty heading and should be used for such articles as "The cost of analytical chemistry equipment" or "How much analytical chemistry does a medical student need to know?"

CHEMISTRY, ORGANIC  
CHEMISTRY, CLINICAL  
BIOCHEMISTRY

These are also specialty headings like CHEMISTRY, ANALYTICAL above and are not meant to be IM or NIM coordinates.



This is the NIM coordinate CHEMISTRY. It is NOT MODELS, CHEMICAL and NOT MOLECULAR MODELS



## EXERCISE

## Category D

This exercise will test your familiarity with the alphabetization of MeSH chemicals and with the filling out of the chemical query form. Pertinent indexing practices will be noted as they arise.

What is the main heading for the underlined concepts? When you supply the main heading, use also the correct subheading if any. If a chemical query form is needed, fill it out as if you were submitting to the Chemical Specialist for a real article.

1. Adverse effects of teflon grafts for legs
2. Production of  $^{52}\text{Fe}$  for use in a radionuclide generator
3. Calcium uptake from calcium-binding protein
4. The renin-angiotensin system
5. 19-Hydroxy prostaglandins E and F in the semen of fertile men
6. Interaction of p-hydroxybenzoic acid and polysorbate 80
7. Glucose phosphate dehydrogenase deficiency
8.  $^{32}\text{P}$  in radionuclide scanning experiments
9. Metabolism of branched-chain amino acids
10. Blood levels of Ca ATPase
11. Combined administration of VM-26 and cytosine arabinoside
12. Transfer RNA in bacteriophages
13. Serum beta globulin in cats
14.  $\beta$ -lactamase inhibitors
15. Effect of diethyldithiocarbamate on the liver
16. Determination of heme proteins
17. Toxicity of 5-S-cysteinyl-dopa, L-dopa and dopamine
18. Determination of pentoxifylline and its metabolite, 1-(5'-hydroxyhexyl)-3,7-dimethylxanthine
19. Contact dermatitis caused by p-aminobenzoic acid
20. Visual acuity disorders caused by O,P-DDD
21. 7-Hydroxymethotrexate in the urine
22. Determination of a new mucolytic drug Adamexina in the serum
23. Treatment of ringworm with dimethylsulfoxide
24. Effect of a prostaglandin endoperoxide analog, U 44069, on systemic circulation
25. Effect of 2-nicotinamidethyl nitrate (SG-75), a new anti-anginal drug, inhibiting cyclic AMP phosphodiesterase



## CATEGORY E

- o Category E contains the various diagnostic, therapeutic, surgical, anesthesia, dental and miscellaneous determinative and methodological procedures.
- o They usually figure as NIM coordinates and, whether routine or not, should be picked up in indexing only when substantively discussed by the author. The mere mention of a technic in explaining "materials and methods" should not be indexed; the technic will appear on the data form only if the author discusses it and its application to his study.
- o Subheadings in this category should be used with thought and discretion.



## TECHNICS: PRINT or NON-PRINT?

In MEDLARS indexers routinely index technics discussed by the author in performing his studies. A technic discussed is accounted for by an indexer but the problem remains as to whether he will print the technic in INDEX MEDICUS or merely store the technic in the computer. The presentation below should help to clarify policy in this area.

△ Epilepsy: review and case report

In this hypothetical article, the EEG is merely one aspect of many facets described by the author: etiology, clinical manifestations, diagnosis, physiopathology, etc. Index:

EPILEPSY (IM)  
ELECTROENCEPHALOGRAPHY (NIM)

△ Epilepsy diagnosis

In this hypothetical article the author discusses several ways of diagnosing epilepsy, of which EEG was one. Index:

EPILEPSY / diagnosis (IM)  
ELECTROENCEPHALOGRAPHY (NIM)

△ EEG in epilepsy

In this hypothetical article, the aim of the author was the taking of the EEG and his presenting a discussion of EEG readings. Although EEG is fairly routine in epilepsy diagnosis, the POINT of the article was the EEG. Index:

EPILEPSY (IM)  
ELECTROENCEPHALOGRAPHY (IM)





## CATEGORY F

- o This is the psychological and psychiatric category.
- o F1 = Normal behavioral processes & personality  
F2 = Normal mental (thinking) processes  
F3 = Deviations from the normal behavioral, personality & mental processes, therefore  
MENTAL DISORDERS  
F4 = Psychological and psychiatric diagnostic & therapeutic technics & services
- o Subheadings assigned to this category have to be divided into those which go with F1 & F2, those with only F3 (corresponding largely to the subheadings assigned to Category C) and those with only F4. If you are in doubt about a specific subheading with a specific main heading, consult the Annotated MeSH.
- o /psychology is permitted with only F3 but the usual coordinate will be a term from F1, F2 or F4 and will probably be IM



## CATEGORY G

- o Category G is the tree devoted predominantly to the physiological processes of living things.
- o The first three trees, however, are devoted to the listing of the biological sciences in general, the health occupations and environmental health.
- o Subheadings here are motley in that some may be used only with G1, G2 and G3 and two - /drug effects and /radiation effects - are the only ones available to G4 through G11 (with, in turn, an exception or two). Consult the Annotated MeSH for specific subheadings with specific main headings in this category.



## IMMUNOLOGY

- o IMMUNOLOGY - the field or specialty or immunologist  
IMMUNITY - the immune process of the body  
IMMUNIZATION - the rendering of the body resistant to attack
- o /immunology is always coordinated with an immunologic heading
- o D24 is the largest source of immunologic headings  
E5 is the largest source of immunologic technic terms
- o SEROLOGY - concerns itself with only in vitro antigen-antibody technics by the strictest definition; used for the specialty & the serologist  
SERODIAGNOSIS - like SEROLOGY, is little used since MeSH provides better specifics; see E1 under SERODIAGNOSIS for much-used technics
- o BLOOD PROTEINS - definition & use
- o ALBUMINS vs SERUM ALBUMIN  
GLOBULINS vs SERUM GLOBULINS
- o Autoimmunity, AUTOANTIBODIES & AUTOIMMUNE DISEASES



## CATEGORY H

- o This category contains headings in the physical sciences. There is a two-fold emphasis: there are many terms for principles in physics and many determinative technics which are also in Category E already or should be.
- o In using Category H, keep constantly in mind also Category E for either duplications or lacunae.
- o A limited number of subheadings is available to this category but some can be used only with man-made concepts (e.g., /instrumentation or /methods with MINIATURIZATION) and some cannot be used with God-created concepts (e.g., you cannot say ADHESIVENESS / instrumentation). Check the Annotated MeSH for specific permissions and prohibitions.





## CATEGORY I

- o Category I contains terms relating to man as a social being and his relation to society.
- o This category is divided into concepts in sociology and the social sciences; in education; in activities predominantly human.
- o Most terms here are IM.
- o Use the subheadings available reflectively or check for specific uses with specific headings in the Annotated MeSH.



## CATEGORY J

- o This is the category of technology and industry.
- o Because food technology is in this category, many terms for FOOD are here too. In this area, be sure to consider food-plant terms also in B6.
- o Again the array of subheadings is motley and individual ones make strange mates for specific headings. Be sure to check the Annotated MeSH for specific permissions and restrictions.



## CATEGORY K

- o These are largely Catalog Section terms used in the cataloging of books, rather than the indexing of articles.
- o Only three subheadings are available: /classification, /education and /history. Check the Annotated MeSH for individual uses.
- o Most terms here will tend to be IM.
- o Of special interest are the following areas:
  - HISTORY OF MEDICINE terms
  - MEDICINE IN ... terms
  - LITERATURE terms
  - RELIGION terms



## CATEGORY L

- o Even more than Category K, Category L is the province of catalogers. These terms are not among the frequently used headings in MeSH in the literature the indexers see.
- o Most terms here tend to be IM.
- o Be discreet in the use of the available sub-headings and always check the Annotated MeSH for specific uses with specific terms here.
- o Of special interest are the following areas:
  - BIBLIOGRAPHY as IM to help reference staff
  - COMMUNICATION
  - COMPUTERS
  - FEEDBACK as a physiological concept (G7)  
and as a psychological concept (F2)
  - DICTIONARIES and NOMENCLATURE as IM to  
help reference staff
  - HANDWRITING vs WRITING
  - LANGUAGE vs LINGUISTICS vs SEMANTICS vs  
SPEECH





### Category M

- o Category M contains people as people or names of groups of people.
- o It is necessary to discuss them in terms of Check Tags for people, and hence as IM vs NIM.
- o Except for the people check tags, the terms here tend to be IM.
- o Only four subheadings are available: /classification, /education, /history and /psychology. Not all fit comfortably with all M terms: be discreet. Only /psychology can be used with the check tag people in M.
- o Check the Annotated MeSH for use of specific subheadings with specific terms herein.
- o Of special interest are the following areas:
  - PATIENTS
  - FAMOUS PERSONS
  - TWINS, TRIPLETS, QUADRUPLETS & QUINTUPLETS vs PREGNANCY, MULTIPLE & LITTER SIZE



## Category N

- o Category N was designed to service the literature of the expanding field of health care in our country: socially, economically, and spiritually. In designing it the health care people had in mind this cohesive grouping of headings in this subcategorization:
  - N1 - what kind of people use medical care?
  - N2 - what are the services and who gives them?
  - N3 - how is society involved? economics, insurance, planning, controls, &
  - N4 - administration, organization and activities in providing medical care
  
- o Note available subheadings with this category but remember these three commonly applicable Category N subheadings with regard to people in the field:
  - / manpower - who is available? or what type of person is available?
  - / supply & distribution- how many of these people are there and where are they?
  - / utilization - how are they used? where are they used? who uses them? how often are they used?
  
- o Note these subheadings available with regard to services in Category N:
  - / economics
  - / legislation & jurisprudence
  - / organization & administration
  - / trends

For a Category N Subheading exercise see page 79.



## INDEXING DEMONSTRATION

- I. Definition of indexing: the use of MeSH headings to describe fully and accurately the content of an article within the rules of coordination and depth laid down under MEDLARS
- II. Refer to the MEDLARS INDEXING MANUAL 4.4 for the READ/SCAN method of indexing
- III. Procedure
  1. Read and mark the title as required
  2. Understand the title
  3. Read the first or more paragraphs word for word down to the point where the author states, "THE PURPOSE OF THIS STUDY IS TO ...."
  4. Do NOT index material in this introductory matter unless it is further discussed in the article and will therefore be picked up as indexable
  5. Scan paragraph by paragraph, noting boldface headings, italicized headings, section headings
  6. Assign headings paragraph by paragraph in the order of the discussions in the text: do not jump around
  7. Index only subjects and aspects of subject discussed, not merely mentioned
  8. Read every word of the summary or conclusion but it is likely that subjects here have already been covered in Procedures 6 and 7 above
  9. Paragraphs indicated as "Discussion" by the author are indexable if the subjects herein are substantive and not merely speculations
  10. Note bibliographic references for clues
  11. Note the author's keywords if given
  12. Note the presence of an abstract but index items referred to in the abstract only if they are actually discussed in the article and would have been picked up anyway in the indexing process



13. Look at the headings you have assigned:  
do the IM terms represent the point of  
the article? are the proper coordinates  
covered? are the elements of the title  
- usually a faithful herald of the con-  
tent of the article - covered as IM?  
are the NIM items actually discussed or  
merely mentioned?
14. Correct any typographical errors

## II. Indexing demonstration

1. The lecturer will index an article "aloud"  
for you, following the above routine step  
by step.
2. The lecturer will answer your questions.
3. The lecturer will assign an article to be in-  
dexed by the class, without his help.
4. The lecturer will go over this article with  
you, showing the correct terms, explaining  
policy governing them and answering your  
questions.
5. The lecturer will repeat 3 and 4 for two more  
articles.

## III. Two-tier indexing (see INDEXING MANUAL 20.11)

1. 1st tier: the point of the article & required  
parameters (coordinates, check tags)
2. 2d tier: secondary aspects discussed but not  
the point
3. 3d tier: examples; mentioned vs discussed

## IV. Sequence of indexing

1. Terms should appear on the Data Form in the  
order of their appearance in the text.
2. Read TECHNICAL NOTE 206, paragraph C for  
a discussion of the sequence of indexing.





## INDEXING PHILOSOPHY

The rules governing indexing policy are numerous and intricate and highly detailed. The basic indexing philosophy, however, is as neat and simple as the rules are myriad.

- An Indexer is only an indexer: he is not a physician, not a research scientist, not an author; an Indexer reports: he does not evaluate, he does not diagnose, he does not perform operations.
- An Indexer who does not understand the point of an article within 10 minutes will not index it any better after 30 or 40 minutes.
- An Indexer will learn as much about antigens for indexing purposes by indexing 40 articles on antigens as by spending 15 hours of indexing time reading about antigens.
- The article in hand is the world's best authority on that article. An accurate Indexer is the world's second best authority.
- An Indexer will provide, in general, for every clinical article to be indexed an organ, a disease affecting that organ, a cause of the disease and a treatment for it.
- An Indexer will always provide, if possible, the technic discussed in the article whereby the subject was studied or the research or therapy was performed.
- An Indexer will always distinguish between an -ology and an organ or disease: the -ology is always the physician; the organ or disease is always the patient. They are never confused.
- An Indexer will describe the concepts or contents of an article faithfully and only within the confines of MeSH.
- An Indexer will always index toward the most specific heading possible: an article on the lung is indexed as LUNG and not as RESPIRATORY SYSTEM.



## EXERCISE 24

## Practice Titles

Each of the titles below was either taken from published issues of INDEX MEDICUS or contrived to generate discussion in class on indexing policy.

Index each of the titles on the practice title exercises on a separate Data Form. Assume that the title truly reflects the content of the article and that the article appeared in a Depth Journal. Use as many main headings and subheadings as you feel are needed and be careful to indicate the required Check Tags, Geographic Headings, etc.

1. Urinary pyridoxine and urinary sodium in infantile myoclonic seizures.
2. Peptic ulcer causing agranulocytosis
3. Cerebellar biopsy in periarteritis nodosa
4. Histochemistry of experimental cerebral edema in rats
5. EEG discharges in acute cerebral arteriosclerosis
  
6. Electron microscopic observations on normal human pancreatic arteries
7. ACTH-induced psychoses in the light of daily 17-hydroxycorticosteroid excretion under high ACTH dosage
8. The effect of illumination and d-amphetamine on the activity of rhesus monkeys
9. Learning and set formation by normal and previously irradiated female rats
10. Chromatographic studies on tryptophan metabolism (via kynurenine) in schizophrenic patients hospitalized in Sweden
  
11. Urinary excretion of adrenaline, noradrenaline and other catecholamines in mental illness
12. Comparison of statistics on subtotal and total hysterectomy at the Rotunda Hospital in Dublin
13. Blood serotonin in pregnancy
14. Blood serotonin in pregnancy complications
15. Plasma serotonin in measles in pregnancy



16. Serum serotonin in normal and pathologic pregnancies
17. Effect of hydrocortisone on plasma enzymes in the rat
18. Effect of hydrocortisone on erythrocyte enzymes in the rat
19. The diagnosis of gout
20. X-ray diagnosis of gout
  
21. The differential diagnosis of gout
22. Gout simulating osteoarthritis
23. Osteoarthritis simulating gout
24. Hyperthyroidism, thyroid adenoma and other thyroid diseases
25. Thyroid abnormalities
  
26. Agenesis of the thyroid
27. Eye manifestations in arthritis
28. Conjunctivitis in arthritis
29. Eye diseases in arthritis
30. Streptococcal conjunctivitis in arthritis
  
31. Measles causing blindness
32. Chlorpromazine causing agranulocytosis in children
33. Serum serotonin in normal and complicated pregnancy in hypophysectomized dogs
34. Cardiac metabolism of copper in myocardial infarct; its correlation with myocardial function. Comparative study of young adults and middle-aged persons
35. Effect of three types of feedback on concept formation in chronic schizophrenics



## Practice Titles

1. Drive, reinforcement and personality
2. Sex differences in attitudes toward leaders' display of authoritarian behavior
3. An approach to measuring psychological tensions by means of dream associations
4. A case of hydatid cyst of the lung and pancreas in a 2-year-old child
5. Neurochemical correlates of behavior. III. Nor-epinephrine and dopamine in four parts of the brain of the pigeon during periods of atypical behavior following injection of 5-hydroxy-tryptophan
6. An unusual case of *Filaria oculi humani* infection associated with Sporozoa infection
7. Synthesis of an unidentified antibiotic substance by a streptomycete (*Streptomyces africanus*)
8. Duodeno-pancreatic injuries in children following blunt and penetrating trauma
9. Standardization of phonocardiographic terminology
10. Directory of the Ophthalmological Society of Australia
11. The influence of emotional factors on adrenal cortex function
12. HCl secretion and intestinal peristalsis after partial resection of the stomach in bleeding ulcer of the fundus in middle-aged personnel managers
13. Sex chromatin in Turner's syndrome
14. Amantadine therapy of influenza A and other respiratory viral diseases in Finnish soldiers
15. Free amino acids on human fingers: the problem of contamination in chromatography
16. Properties of ribonucleic acid isolated from alfalfa mosaic virus
17. Comparative response of the guinea pig and rabbit myocardium to isonicotinic acid hydrazide
18. Electron microscopy of cortisone-producing cells in the rat adrenal; radiocarbon studies
19. Historical note on a 19th century case report of pancreatic cystic fibrosis
20. Radioarenography in nephritis





## EXERCISE 26

## Practice Titles

1. Sclerosis of the lungs, bile ducts and adrenal medulla
2. Changes in liver function and morphology in recurrent pancreatitis
3. Changes in phosphorus compounds in the diaphragm; study based on P32-labeled inorganic phosphate
4. The suicide of Marilyn Monroe: a re-examination of the psychodynamic study
5. Drinking and smoking habits of New York, New Jersey and Puerto Ricans; an epidemiological and psychological comparison
6. Follow-up study of a case of therapy with thyroid antagonists in heart disease in a 12-year-old boy
7. Who is there to be the dermatologist of the Lunar Age?
8. How can nursing care be measured in hospital for chronic disease?
9. The physiology of auditory perception
10. Thin-layer chromatography of bile acids
11. Party-switching and authoritarianism in the 1970 elections
12. Pancreas morphology in pancreatitis
13. Studies on the perfused rat liver. VIII. The effect of glucagon and insulin on glucose metabolism and gluconeogenesis in the liver in the presence of bicarbonates
14. Biopsy of the gastric mucosa in postoperative gastritis caused by methyl alcohol intoxication
15. Effect of excision of the adrenal medulla on fracture healing in rats; a follow-up study



MEDLARS TRAINING PROGRAM  
INDEXING TRAINING SYLLABUS

Answers to Exercises

When the exercises were designed, we tried to keep in mind examples and headings which would tend to stand regardless of the date of the MeSH being used for answering questions.

Teachers should keep in mind that since MeSH changes annually in many areas, a few answers below might be wrong in relation to the current MeSH being used during training. Review the answers to the exercises in this light and make the proper adjustments.

Exercise 2 - INDEX MEDICUS (page 18)

1. Subject Section and Author Section
2. One "et al."
3. All
4. Only on the lower-case letters of authors' names or on foreign words spelled in English with an accent
5. Yes, for those languages for which MEDLARS cannot provide vernacular typography
6. Beginning in 1976 cross-references are supplied in the monthly issues as well as in the cumulation.
7. Yes, given a citation with authors A, B, C, etc., there are cross-references reading B see A, C see A, etc.
8. By subheading, then by journal title abbreviation within the subheading - with English articles first, followed by foreign articles in the alphabetical order of the language symbol
9. Three: 1) under the author, 2) under the biographee, 3) under the subject: here under Fairchild and (Freud) in the author section and under COCAINE in the subject section
10. Yes, whether there is an author or not, an article on a specific subject appears under that subject in the subject section. In the author section, foreign-lan-



guage titles without authors are gathered together under ANONYMOUS at the end of the author section.

11. In the usual way (see 8 above) but with the source alphabetized by a locator word In: followed by the editor(s), monograph title, imprint and call number. This is set in the position of the journal title abbreviation and the In: falls in alphabetical order in the I's and before the J's
12. Only under the author(s) of the individual item indexed within the monograph, not under the editor(s)

### Exercise 3 - INDEX MEDICUS (page 19)

1. HISTAMINE LIBERATION
2. FINGERSUCKING or GINGIVA
3. HIP DISLOCATION and HIP DISLOCATION, CONGENITAL
4. BRAIN or BRAIN CHEMISTRY, or LIPIDS (but not FATS)
5. INFECTION (but usually BACTERIAL INFECTIONS) or BURNS and other burns terms
6. CACAO or CORONARY DISEASE
7. INFECTION or probably BACTERIAL INFECTIONS but not CHILD nor PEDIATRICS
8. BACILLUS MEGATERIUM (note spelling: -TER-, not -THER-) but not CHEMISTRY
9. BRAIN or KURU but not BRAIN DISEASES
10. BLOOD COAGULATION or PREGNANCY but not PREGNANCY COMPLICATIONS, HEMATOLOGIC

### Exercise 4 - MeSH (page 28)

1. ONCOGENIC VIRUSES
2. MUSCULAR DISEASES (note that AMYOTONIA is not AMYOTONIA CONGENITA)
3. PESTICIDES
4. PARASYMPATHOMIMETICS
5. LYMPHOID TISSUE
6. EYE but the slant of the journal determines preferred specifics: a dermatology journal? an ophthalmology journal?
7. BLOOD CELLS
8. SILICOSIS in either C8 or C21
9. GRAIN whether in B6 or J; consider also CEREALS
10. ANESTHESIA, CONDUCTION



## Exercise 5 - MeSH (page 29)

1. RADIOISOTOPE RENOGRAPHY or KIDNEY/radionuclide imaging; compare MeSH's RENOGRAPHY with Dorland's renography (= KIDNEY/radiography). Always check text.
2. SUBVALVULAR STENOSIS, IDIOPATHIC HYPERTROPHIC
3. LICHENS if plant; SKIN DISEASES or LICHEN PLANUS (see Dorland) if disease
4. SWEAT GLAND DISEASES. The purpose here is to alert the indexer to frequent misspellings and interchangeable (but wrong) use of dis- and dys- and hidr- and hydr-
5. DISABLED or HANDICAPPED
6. SPREADING CORTICAL DEPRESSION
7. DE TONI-DEBRE-FANCONI SYNDROME
8. MICROFILARIA DIURNA leads to LOA LOA and Loa loa infection leads to LOAIASIS.
9. LOBOTOMY + FRONTAL LOBE
10. PNEUMONECTOMY
11. HEART NEOPLASMS + HEART VENTRICLE or CEREBRAL VENTRICLE NEOPLASMS
12. BACTERIA but not also CELL SURVIVAL nor SURVIVAL
13. RETINAL PIGMENTS
14. Any of the reinforcement headings is acceptable since no information is given in the exercise.
15. JURISPRUDENCE, which is equal to "medical jurisprudence" in our bibliographies
16. HIGHER NERVOUS ACTIVITY
17. DOGS + BITES AND STINGS
18. There is nothing in the system at this time to cover this. The concept must be approached from other aspects in the article (e.g., ACCIDENTS, TRAFFIC? TRANSPORTATION? EXERCISE THERAPY? SPORTS? etc.)
19. LETHAL MIDLINE GRANULOMA
20. BACTERIA or BACTERIOLOGICAL TECHNIQS but not also CULTURE
21. LEG INJURIES + FRACTURES
22. DIET, SODIUM-RESTRICTED
23. FOOD or COOKERY or HEAT - whatever is applicable in the article
24. VEGETABLES (not FRUIT) as food, PLANTS as experimental tissue
25. BRAIN EDEMA





26. PROXIMAL RENAL TUBULAR DYSFUNCTION; using the PERMUTED MeSH is the easiest approach to this concept
27. CHOCOLATE + CANDY
28. DIPLOPIA
29. CRANIAL FOSSA, POSTERIOR
30. SYMPATHETIC NERVOUS SYSTEM
31. TOILET FACILITIES: see annotation there. Often, however, a locational coordinate is required, e.g., NURSING CARE; HOSPITAL EQUIPMENT AND SUPPLIES.
32. AMEBIASIS, HEPATIC (note that this is a synonym for LIVER ABSCESS, AMEBIC)
33. AS IF PERSONALITY
34. PHARMACOLOGY; read annotation there
35. RESPIRATION

#### Exercise 6 - MeSH (page 30)

1. PSEUDOMONADACEAE or PSEUDOMONAS + WATER MICROBIOLOGY (or other appropriate water terms)
2. STRONTIUM RADIOISOTOPES + RADIOACTIVE FALLOUT
3. BODY TEMPERATURE + RECTUM
4. SALIVA + SUGARS
5. ANATOMY + PATHOLOGY; since these terms are used only as specialty terms, it is not necessary to supply also either of the two specialty terms in MeSH.
6. WOUNDS AND INJURIES + ACCIDENTS, TRAFFIC
7. FRACTURES + BOXING + BASEBALL + ATHLETIC INJURIES (see annotation there)
8. MENINGITIS + STAPH INFECTIONS + STREPTOCOCCAL INFECTIONS
9. DUODENAL OBSTRUCTION + APPENDECTOMY + POSTOPERATIVE COMPLICATIONS
10. MITRAL VALVE STENOSIS

#### Exercise 7 - ANNOTATED MeSH (page 31)

1. GEN: usually a general heading only  
 IM: usually IM  
 NIM coord: index this as an NIM coordinate helpful in search  
 65: the year (i.e., 1965) the term entered the system for indexers, searchers and catalogers  
 70(65): the term entered the system for searching in 1965 and became available to the published INDEX MEDICUS in 1970  
 no qualif: no subheadings may be used with this term  
 SPEC: SPEC qualif: this term is usually considered a specialty



and takes with it only the specialty subheadings listed in the Introduction

A 11 qualif: only those subheadings shown in the Introduction may be used with the main heading in question

TN: refer to the specific TECHNICAL NOTE following the TN

2. 1975
3. Before 1963
4. Probably BLOOD with the subheading /physiol (see annotation under BLOOD, but not BLOOD PHYSIOLOGY since this is NON MESH
5. THROMBOCYTES
6. One
7. No
8. None
9. Any of these: fog, hail, rain, snow - all are MeSH terms
10. No subheadings are permitted with SNOW so this is indexed as SNOW + FROSTBITE
11. In 1972 for searchers but not until 1974 for the public using INDEX MEDICUS
12. WATER POLLUTION, CHEMICAL
13. Yes
14. Under WASTE DISPOSAL, SOLID but it will be printed in INDEX MEDICUS under REFUSE DISPOSAL
15. ABORTION, EUGENIC may be used for animals but not ABORTION, LEGAL
16. CALCIUM is printed in INDEX MEDICUS but ABSORPTION should not be
17. Aspiration biopsy and puncture biopsy - all MeSH terms
18. Availability equivalency, biologic availability, physiologic availability - all themselves MeSH terms
19. INTUBATION, GASTROINTESTINAL (see annotation there)
20. No
21.
  - a. It doesn't matter except that FACTOR V is shorter
  - b. It doesn't matter except that BRAIN ABSCESS is shorter
  - c. It doesn't matter except that ABSCISSINS is shorter
  - d. PLASMA VOLUME since it is shorter
  - e. BIOMATERIALS since it is shorter
  - f. WATTLES since it is shorter; COMB (rule on short forms for AND terms) is still shorter
22. BLOOD CIRCULATION
23. A term without a statement regarding IM is usually printed in INDEX MEDICUS (unless, of course, it is being picked up in indexing in depth and is therefore NIM). A term with a statement about IM suggests that printing it or not printing it is open to question in an indexer's mind and therefore a general suggestion is made by the annotation.



24. Two: both as a body fluid (A12) and as a part of the blood system (A15)
25. M. It takes the tree number of the heading to which it refers. Both the "seeker" and the "applicant" are persons and this is the tree gathering together all the personal headings.
26. For humans, ANTHROPOMETRY is more specific; BIOMETRY is for non-human animal terms
27. Because BIOPHYSICS is often used as a search parameter, as "the biophysics of blood circulation"
28. No, the correct heading is WATER INTOXICATION
29. WATER MICROBIOLOGY
30. Probably under BLOOD CELLS or BLOOD CELL COUNT, says the note under BLOOD

#### Exercise 8 - IM and NIM (page 43)

1. NIM
2. IM
3. NIM (since INFANT, NEWBORN, DISEASES is IM)
4. NIM
5. IM as a period of biological life with physiological significance; NIM as merely one age group among others
6. IM as a significant period of biological, social, psychological meaning as ADOLESCENCE
7. NIM with INFANT MORTALITY as IM
8. SCHISTOSOMIASIS (IM) + PREGN COMPL INFECT (IM) + DOGS (NIM) + PREGNANCY (NIM) + ANIMAL + FEMALE
9. if experimental: PREGNANCY, ANIMAL (IM) + PREGNANCY (NIM) + DOGS (NIM) + ANIMAL + FEMALE; if veterinary: PREGNANCY, ANIMAL (IM) + DOGS (IM) + PREGNANCY (NIM) + ANIMAL + FEMALE
10. this is a veterinary article: PREGNANCY, ECTOPIC (IM) + DOG DISEASES (IM) + PREGNANCY (NIM) + DOGS (NIM) + ANIMAL + FEMALE
11. both are NIM since the main heading used is PREGNANCY IN ADOLESCENCE as IM
12. NIM since CATTLE DISEASES is IM
13. NIM probably unless the species be particularly significant
14. NIM
15. IM if an anatomical or physiological study on rabbits (which is then IM with a subheading); NIM if an anatomical or physiological study on motor neurons (IM)
16. IM since the article is probably an over-all picture of life in the 19th century
17. IM since most articles on ancient days are IM
18. IM if the emphasis is on research in the 19th century
19. IM as species specific
20. NIM





## Exercise 9 - Check Tags (page 44)

1. HUMAN + ANIMAL
2. HUMAN + CHILD (but not the other child tags)
3. HUMAN
4. ANIMAL + RATS + SWINE (which is typed on the data form)
5. ANIMAL but no age tag
  
6. ANIMAL + MICE but not INF NEW
7. BIOG-OBIT if journal is dated 1977 or 1978; HIST BIOG + 20TH CENT if journal is dated 1979 or later
8. BIOG-OBIT
9. NOBEL PRIZE + MEDICINE + HIST ART + 20th CENT; if Field 15 contains specific names (3 maximum) you must check HIST BIOG + BIOG-OBIT (if brought up to current years)
10. HUMAN but not the tag INF NEW: INF NEW is IM
  
11. HUMAN + AGED
12. HUMAN + CHILD PRE
13. HUMAN but not the tag AGED: AGED is IM
14. Probably a veterinary article & therefore indexed in full as PREGN COMPL/vet (IM) + DOG DISEASES (IM) + PREGNANCY + DOGS + ANIMAL + FEMALE
15. HIST ART + HIST BIOG + 18TH CENT
  
16. HIST ART + HUMAN + date tags + possibly HIST BIOG if specific syphilitics are picked up as biographees (a limited number) for Field 15; but not CASE REPT
17. HUMAN + INF but not INF NEW unless in the article
18. none
19. HUMAN + AGED
20. none
  
21. HUMAN or ANIMAL or both for in vivo + IN VITRO
22. HISTORY OF MEDICINE, ANCIENT must appear in Field 21 (must not be checked as ANCIENT) + HIST ART
23. ANIMAL + CASE REPT + DOGS (but also DOG DISEASES in Field 21)
24. HUMAN + CHILD PRE
25. HUMAN + MALE + MIDDLE AGE + specific tag for "young men", probably ADULT, + COMP STUDY





## Exercise 10 - Coordination (page 48)

- |      |       |       |
|------|-------|-------|
| 1. b | 6. c  | 11. a |
| 2. b | 7. a  | 12. c |
| 3. b | 8. a  | 13. a |
| 4. c | 9. a  | 14. a |
| 5. a | 10. a | 15. a |

## Exercise 11 - Coordination (page 50)

1. KERATIN + CORNEA + CORNEAL DYSTROPHIES
2. LIPASE + BRAIN + BRAIN NEOPLASMS
3. ESTROGENS + OVARIAN DISEASES + PREGNANCY + FEMALE
4. LIVER + HEPATITIS, ANIMAL + GLUCOSE + RATS + ANIMAL
5. INSULIN + ADMINISTRATION, ORAL + LIVER GLYCOGEN + (radiation effects) + MICE + ANIMAL; see annotation for X-RAYS
6. CATALASE + LIVER + MENINGITIS; BRAIN + CATALASE
7. TOOTH + RACCOONS + CELLULOSE + ANIMAL; if "cellulose digestion" is viewed as the metabolic breakdown of cellulose, this is CELLULOSE/metab; if the article is viewed as "the digestive process of raccoons", add DIGESTION
8. PANCREAS + SALMONELLA + DIABETES MELLITUS; SALMONELLA INFECTIONS + PANCREATIC DISEASES + DIABETES MELLITUS
9. MASTITIS, BOVINE + STAPH INFECTIONS + CATTLE + ANIMAL + FEMALE; MARYLAND + DISEASE OUTBREAKS

## Exercise 12 - Coordination (page 51)

1. IRIS (IM) + UVEAL DISEASES (NIM)
2. CYSTIC DUCT (IM) + BILE DUCT DISEASES (NIM)
3. CORNEAL DISEASES (IM) + EYE NEOPLASMS (IM)
4. TIBIA (IM) + BONE DISEASES (IM)
5. PANCREATIC DISEASES (IM) + CALCULI (IM)
6. DOG DISEASES (IM) + NEOPLASMS (IM)
7. CERVICAL VERTEBRAE (IM) + SPONDYLITIS (IM)
8. GANGRENE (IM) + FOOT DISEASES (IM)
9. STOMACH DISEASES (IM) + STAPH INFECTIONS (IM)
10. same as 9
11. CORNEA (IM) + EYE FOREIGN BODIES (IM)
12. If as bone, FINGERS (IM) + BONE DISEASES or specific bone disease (IM); if location for a skin disease, FINGERS (NIM) + HAND DERMATOSES (IM) + specific skin disease (IM); if for finger muscles, FINGERS (IM) + MUSCULAR DISEASES (IM)
13. THIGH (IM) + MUSCULAR DISEASES (IM)
14. VARICOSE VEINS; see annotation there
15. KIDNEY GLOMERULI (IM) + KIDNEY DISEASES (IM)



## Exercise 13 - Subheadings (page 64)

- |                              |                                |
|------------------------------|--------------------------------|
| 1. /antagonists & inhibitors | /isolation & purification      |
| /anatomy & histology         | /legislation & jurisprudence   |
| /familial & genetic          | /organization & administration |
| 2. /prevention & control     | /antagonists & inhibitors      |
| /growth & development        | /supply & distribution         |
| 3. Shorten to -ol            |                                |
| 4. /chem syn                 | /pathogen                      |
| /drug eff                    | /radiogr                       |
| /csf                         | /transm                        |

## Exercise 14 - Subheadings (page 65)

1. LUNG / \* abnorm + HUMAN
2. SALMONELLA / \* isol + COLON / \* microbiol + HUMAN
3. INTESTINAL NEOPLASMS / \* surg + HUMAN
4. KIDNEY / \* physiol + RACCOONS / \* physiol + ANIMAL
5. HAND INJURIES / \* etiol + ACCIDENTS, TRAFFIC + HUMAN
6. LIVER / \* physiopathol + PANCREATITIS / \* physiopathol + HEPATITIS / \* physiopathol + HUMAN
7. ERYTHROCYTES / \* cytol or / \* pathol + ANEMIA / \* blood + HUMAN
8. LEUKOCYTES / \* enzymol + PHOSPHATASES / \* blood + AGAMMAGLOBULINEMIA / \* enzymol + AGAMMAGLOBULINEMIA / blood + HUMAN
9. LUNG / \* anal + PNEUMONIA / \* metab + HUMAN
10. IRON / \* metab + LIVER / \* metab + ERYTHROCYTES / \*metab + IRON / blood + HEMOCHROMATOSIS / \* metab + HEMOCHROMATOSIS / blood + HUMAN
11. BRAIN / \* pathol + MULTIPLE SCLEROSIS / \* pathol
12. CELL WALL / metab + MYCOBACTERIUM TUBERCULOSIS / \* metab + MYCOBACTERIUM TUBERCULOSIS / ultrastruct + TUBERCULOSIS, PULMONARY / \* microbiol + HUMAN
13. CORNEA / \* ultrastruct + CORNEA / pathol (optional) + EYE DISEASES / \* pathol + HUMAN + MICROSCOPY, ELECTRON
14. KNEE INJURIES / \* radiogr + KNEE INJURIES / \* radiother (if equal amounts of text) or KNEE INJURIES / \* radiogr + KNEE INJURIES / radiother (if more on x-ray than on therapy) + HUMAN
15. STAPH INFECTIONS / \* vet + MASTITIS, BOVINE ( / \* occur possible) + CATTLE + ANIMAL + FEMALE + MARYLAND + DISEASE OUTBREAKS / \* vet
16. SALMONELLAE / \* isol + PANCREAS / \* microbiol + DIABETES MELLITUS / \* microbiol; + SALMONELLA INFECTIONS / \* metab + PANCREATIC DISEASES / \* metab + DIABETES MELLITUS / metab + DIABETES MELLITUS / compl + PANCREATIC DISEASES / compl + SALMONELLA INFECTIONS / compl + HUMAN



17. \* NEOPLASMS + NEOPLASMS / etiol + NEOPLASMS / pathol + NEOPLASMS / ther + HUMAN
18. MYOCARDIUM / \* metab + MYOCARDIUM / anal + HUMAN
19. BRAIN / \* radionuclide + BRAIN NEOPLASMS / \* radionuclide + HUMAN
20. ALCOHOLISM / \* psychol + LIVER CIRRHOSIS, ALCOHOLIC / \* psychol + HUMAN

#### Exercise 15 - Common Coordinations (page 66)

1. LIVER / metab
2. LIVER / microbiol, LIVER ABSCESS, AMEBIC / microbiol
3. LIVER / parasitol, LIVER ABSCESS, AMEBIC / parasitol
4. ECHOVIRUSES / drug eff
5. ECHOVIRUSES / metab
6. ISOMERASES / metab, PANCREAS / enzymol
7. / compl, / compl
8. STREPTOCOCCUS / drug eff, NEOMYCIN / pharm
9. LIVER / metab, ANGINA PECTORIS / metab
10. PREGNANCY with no subheading, STAPHYLOCOCCUS / pathogen
11. LIVER / pathol, HEPATITIS / pathol
12. MEASLES / compl, DEAFNESS / etiol
13. HEPATITIS / metab
14. LIVER / enzymol, HEPATITIS / enzymol
15. SKIN ULCERS / drug ther
16. LIVER / enzymol, CATALASE / metab
17. AMPICILLIN / adv eff
18. AMPICILLIN / adv eff, ABORTION / chem ind (not ABORTION, INDUCED)
19. BRAIN / rad eff, X-RAYS with no subheading
20. SCHIZOPHRENIA / compl, ALCOHOLISM / compl or ALCOHOLISM / psychol or both

#### Exercise 16 - Subheadings (page 69)

- |      |       |       |       |          |
|------|-------|-------|-------|----------|
| 1. c | 8. b  | 15. a | 22. b | 29. none |
| 2. c | 9. c  | 16. c | 23. c | 30. c    |
| 3. b | 10. a | 17. a | 24. c | 31. b    |
| 4. a | 11. d | 18. c | 25. c | 32. d    |
| 5. c | 12. a | 19. c | 26. b | 33. c    |
| 6. a | 13. b | 20. b | 27. c | 34. a    |
| 7. b | 14. b | 21. a | 28. b |          |





## Exercise 17 - Subheadings (page 75)

1. LASERS / diag use, REFRACTION, OCULAR with no subheading
2. CAPILLARY RESISTANCE with no subheading, DIABETIC RETINOPATHY / physiopathol
3. STRABISMUS / occur
4. INTESTINE, SMALL / enzymol, ALKALINE PHOSPHATASE / anal
5. ATHEROMA / pathol
6. LIPIDS / anal or LIPIDS / metab, CYSTS / metab
7. MAST CELLS / drug eff, NEOMYCIN / pharm
8. TRYPANOSOMA / physiol
9. PULMONARY EMBOLISM / etiol, NEPHROSIS / compl
10. KIDNEY NEOPLASMS / radiogr, SARCOMA / radiogr, PYELOGRAPHY with no subheading
11. HORSES with no subheading, PREMEDICATION / vet
12. GANGLIA, AUTONOMIC without / class for it is permitted in Category A with only A 11
13. This is a trap: the correct jejunum term is JEJUNAL DISEASES with no subheading
14. DERMATITIS, CONTACT / etiol, NYLON / adv eff
15. RUBBER with no subheading
16. RESPIRATORY INSUFFICIENCY / etiol
17. OTITIS MEDIA / surg, CHRONIC DISEASE with no subheading
18. no subheading
19. PROSTATIC HYPERTROPHY / familial
20. SPACE FLIGHT with no subheading (see annotation there); LIFE SUPPORT SYSTEMS with no subheading
21. RADIOTHERAPY with no subheading for /trends is not permitted with Category E
22. RADIOLOGY / trends
23. FRACTURE FIXATION with no subheading for /trends is not permitted with Category E
24. FRACTURES / ther; "trends" cannot be handled here
25. SECURITY MEASURES / econ, COST-BENEFIT ANALYSIS with no subheading

## Exercise 18 - Subheadings (page 78)

- |                           |   |
|---------------------------|---|
| 1. KIDNEY / pathol        | 8. GLUCOSE / metab                                  |
| 2. PANCREATITIS / enzymol | 9. nothing  |
| 3. GASTRITIS / vet        | 10. CORTISONE / physiol                             |
| 4. HEAT / ther use        | 11. HEMOCHROMATOSIS / blood                         |
| 5. ULTRASONICS / diag use | 12. MENINGITIS / csf                                |
| 6. RADIOLOGY / man        | 13. HEPATITIS / metab or conceivably / physiopathol |
| 7. PHARMACISTS / supply   | 14. RACCOONS / metab                                |





## Exercise 19 - Subheadings: Category N (page 79)

- |                     |                                |
|---------------------|--------------------------------|
| 1. / supply         | 11. / hist                     |
| 2. / stand          | 12. / instrum                  |
| 3. nothing          | 13. / util                     |
| 4. / util           | 14. nothing                    |
| 5. / man            | 15. cannot determine from this |
| 6. / educ           | 16. nothing                    |
| 7. / stand          | 17. / econ, nothing            |
| 8. / methods        | 18. nothing, / organ           |
| 9. / educ           | 19. / econ, nothing, nothing   |
| 10. / man, / supply | 20. / legis, / legis           |

## Exercise 20 - Bacteria (page 91)

1. M TUBERC
2. LACTOBACILLUS ACIDOPHILUS
3. STAPHYLOCOCCUS AUREUS (but MICROCOCCUS PYOGENES is an entry term)
4. VEILLONELLACEAE
5. ERWINIA
6. XANTHOMONAS
7. NOCARDIA: here the trap is that either you must go to the 7th ed. of Bergey (since it is not in the 8th as Streptomyces or africanus in the index) or it can be found in the Annotated MeSH under STREPTOMYCES, which says "S. africanus = NOCARDIA"
8. SHIGELLA DYSENTERIAE
9. ACTINOBACILLUS
10. This is also a trap: this is not a bacterium and must be looked for in the Dictionary of the Fungi, not Bergey

## Exercise 21 - Viruses (page 92)

1. ENCEPHALITIS VIRUSES, TICK-BORNE
2. not in Andrewes 4th ed.; in 3d ed. as PAPILLOMA VIRUSES
3. EBOLA VIRUS
4. ORTHOMYXOVIRUSES TYPE A
5. not in Andrewes 4th ed.; in 3d ed. under Cat as FELINE INFECTIOUS ENTERITIS VIRUS



6. PARAMYXOVIRUSES
7. MeSH TRACHOMA VIRUS see CHLAMYDIA TRACHOMATIS, B3: a bacterium, not a virus
8. IRIDOVIRUSES
9. VISNA-MAEDI VIRUSES
10. GASTROENTERITIS VIRUS OF SWINE if of swine, VERTEBRATE VIRUSES, UNCLASSIFIED if of man
11. not in Andrewes 4th ed.; in 3d ed. as VERTEBRATE VIRUSES, UNCLASSIFIED
12. RABIES VIRUS
13. SHOPE PAPILLOMA VIRUS or PAPOVAVIRUSES if oral of rabbit

#### Exercise 22 - Fungi (page 93)

1. → Hyphomycetes → MONILIALES
2. MUCOR
3. → Aureobasidium → Hyphomycetes → MONILIALES
4. → Auriculariales → BASIDIOMYCETES
5. LICHENS or Heteromyces → Oliveonia → Tulasnellales → BASIDIOMYCETES
6. ASCOMYCETES
7. → Melanconiales → DEUTEROMYCETES
8. LICHENS
9. a trap: sclerotium (a mass of hyphae), not Sclerotium; index under FUNGI or specific fungus term
10. → Tuberales → ASCOMYCETES

#### Exercise 23 - Tumor Key (page 99)

1. ARRHENOBLASTOMA
2. ARRHENOBLASTOMA
3. HEMOANGIOENDOTHELIOMA
4. CARCINOMA, TRANSITIONAL CELL
5. HEPATOMA
6. CARCINOMA
7. CARCINOMA, SQUAMOUS CELL + CARCINOMA IN SITU
8. CARCINOMA, OAT CELL
9. HEMANGIOMA + LIPOMA
10. NEURILEMMOMA
11. SARCOMA, OSTEOGENIC + FEMUR HEAD + FEMORAL NEOPLASMS
12. ASTROCYTOMA + FRONTAL LOBE + BRAIN NEOPLASMS
13. CHOLANGIOMA + BILE DUCT NEOPLASMS
14. LEIOMYOMA + UTERINE NEOPLASMS
15. HEPATOMA + LIVER NEOPLASMS







- |     |   |                 |
|-----|---|-----------------|
| 6.  | LUNG NEOPLASMS / * drug ther<br>ADENOCARCINOMA / * drug ther<br>FLUOROURACIL / * ther use<br>ADRIAMYCIN / * ther use<br>MITOMYCIN / * ther use<br>See policy on indexing multiple chemotherapy in cancer &<br>policy on IM/NIM in relation to number of chemicals | HUMAN           |
| 7.  | SARCOMA / * drug ther<br>UTERINE NEOPLASMS / * drug ther<br>SARCOMA / pathol<br>UTERINE NEOPLASMS / pathol<br>NEOPLASM METASTASIS<br>DRUG THERAPY, COMBINATION  | HUMAN<br>FEMALE |
| 8.  | LYMPHOMA / * radiother<br>LYMPHOMA / pathol   | HUMAN           |
| 9.  | CERVIX NEOPLASMS / * radiother  | HUMAN<br>FEMALE |
| 10. | UTERINE NEOPLASMS / * radiother<br>NEOPLASMS, EMBRYONAL AND MIXED / * radiother   | HUMAN<br>FEMALE |
| 11. | UTERINE NEOPLASMS<br>ADENOCARCINOMA   | HUMAN<br>FEMALE |
| 12. | MULTIPLE MYELOMA / * diag<br>ADENOMA, CHROMOPHOBE / * diag<br>PITUITARY NEOPLASMS / * diag<br>DIAGNOSIS, DIFFERENTIAL   | HUMAN           |

Fistula (page 100)

INTESTINAL FISTULA  
    FISSURE IN ANO  
    RECTAL FISTULA  
    RECTOVAGINAL FISTULA

URINARY FISTULA  
    BLADDER FISTULA  
    VESICOVAGINAL FISTULA

DENTAL FISTULA  
OROANTRAL FISTULA  
SALIVARY GLAND FISTULA

Continued on next page.





cholecystoduodenal fistula = GALLBLADDER DISEASES + BILIARY  
 FISTULA + DUODENAL DISEASES + INTESTINAL FISTULA  
 vesicovaginorectal fistula = VESICOVAGINAL FISTULA + RECTO-  
 VAGINAL FISTULA  
 esophagotracheal fistula = TRACHEOESOPHAGEAL FISTULA  
 renopulmonary fistula = URINARY FISTULA + KIDNEY DISEASES +  
 LUNG DISEASES + FISTULA  
 uterine fistula = UTERINE DISEASES + FISTULA

## Exercise - Manifestations (page 101 A)

### SKIN MANIFESTATIONS

1. Possibly correct
2. Wrong. SKIN DISEASES + coordinates
3. Possibly correct but in a dermatology journal, as here,  
a better heading is likely
4. Wrong. SKIN DISEASES or SKIN /pathology or a better term  
since this is a dermatology journal
5. Same as 3
6. Same as 3
7. Same as 3
8. Possibly correct
9. Possibly correct
10. Same as 3
11. Same as 3
12. Same as 3
13. Same as 3
14. Wrong. SKIN DISEASES or more specific depending upon the  
text to define "abnormalities"
15. Wrong: read Dorland, page 1417
16. Possibly correct
17. Wrong. FAT NECROSIS
18. Possibly correct
19. Wrong. SKIN DISEASES or SKIN /pathology
20. Possibly correct
21. Wrong. SKIN ULCER + ATROPHY + SKIN /pathology + ACRODERMA-  
TITIS

### EYE MANIFESTATIONS

1. Wrong. OPTIC DISK /blood supply
2. Possibly correct but in an ophthalmology journal, as here,  
a better heading is likely



3. Wrong. The journal suggests a more specific heading, probably optometric (VISION DISORDERS, etc.).
4. Wrong. "Ophthalmopathy" = EYE DISEASES, not EYE MANIFESTATIONS.
5. Wrong. Probably OPTIC DISK./pathology; this is an ophthalmology journal.
6. Same as 2
7. Same as 2
8. Wrong. Probably disease terms relating to OCULOMOTOR MUSCLES, etc.; this is an ophthalmology journal.
9. Same as 8
10. Possibly correct
11. Possibly correct
12. Same as 2
13. Possibly correct
14. Same as 2
15. Same as 2
16. Same as 2
17. Wrong. The correct coordination for EVOKED POTENTIALS is an EYE (or specific) /physiology or vision physiology term.
18. Same as 2
19. Wrong. "Neuro-ophthalmological symptomatology" = EYE DISEASES, not EYE MANIFESTATIONS. The "neuro-ophthalmological" suggests OPTIC NERVE or a related concept - disease, not manifestation. Note that it probably does not mean "neural and ophthalmological" since the same article is not indexed under NEUROLOGIC MANIFESTATIONS. This is an ophthalmology journal and hence a specific heading is likely.
20. Same as 2

#### NEUROLOGIC MANIFESTATIONS

1. Wrong. "Neuropsychological" is not "neurological".
2. Wrong. "Complications" suggests "diseases": NERVOUS SYSTEM DISEASES or a specific.
3. Wrong. "Symptoms" suggests "diseases".
4. Same as 3
5. Same as 3
6. Possibly correct but in a neurology journal, as here, a better heading is likely
7. Wrong. "Involvement" suggests a disease.
8. Same as 6
9. Possibly correct
10. Possibly correct
11. Possibly correct
12. Possibly correct
13. Wrong. Probably NERVOUS SYSTEM DISEASES or a specific
14. Possibly correct



## Exercise - Category D (page 104 A)

1. TEFLON / adv eff or POLYTETRAFLUOROETHYLENE / adv eff.  
TEFLON is preferable because it is shorter.
2. IRON RADIOISOTOPES - no subheading
3. CALCIUM-BINDING PROTEINS / metab
4. ANGIOTENSIN / physiol or ANGIOTENSIN II / physiol. First is preferred because it is shorter.
5. Submit chemical query with /metab or /anal (article will indicate) (IM)
6. Under P: PARA-HYDROXYBENZOIC ACIDS / pharm or PARABENS /pharm.  
PARABENS is preferable because it is shorter.  
POLYSORBATE 80 / pharm
7. GLUCOSEPHOSPHATE DEHYDROGENASE DEFICIENCY or preferred data form abbreviation GPD DEFIC
8. PHOSPHORUS RADIOISOTOPES / diag use
9. AMINO ACIDS, BRANCHED-CHAIN / metab
10. CALCIUM ATPASE / blood or ADENOSINE TRIPHOSPHATASE CALCIUM / blood or CA ATPASE / blood. The last is preferred as the data form abbreviation (DF:).
11. VM 26 / admin + CYTOSINE ARABINOSIDE / admin or CYTARABINE / admin. The latter is preferred because it is shorter
12. RNA, TRANSFER - no subheading detectable from exercise
13. Under B: BETA GLOBULINS - no subheading detectable from exercise but /blood is not permitted
14. Under B: BETA-LACTAMASES / antag
15. DIETHYLDITHIOCARBAMATE / pharm
16. HEMEPROTEINS / anal
17. 5-S-cysteinyl-dopa: submit chemical query with / tox (IM)  
L-DOPA / tox or LEVODOPA /tox. The first is preferred because it is shorter  
DOPAMINE / tox
18. PENTOXIFYLLINE / anal + chemical query for the metabolite with / anal (IM)
19. Under P: PARA-AMINOBENZOIC ACID / adv eff or  
Under A: P-AMINOBENZOIC ACID / adv eff
20. Under D: O,P,-DDD / adv eff or MITOTANE / adv eff
21. Submit chemical query with /urine (IM)
22. Submit chemical query with /blood (IM)
23. DIMETHYL SULFOXIDE / ther use or X reference DMSO / ther use which is shorter
24. Despite the MeSH PROSTAGLANDIN ENDOPEROXIDE ANALOGS see PROSTAGLANDIN ENDOPEROXIDES, SYNTHETIC, submit chemical query with / pharm (IM)
25. Submit chemical query with /pharm (IM)





## Exercise 24 - Practice Titles (page 120)

In the interests of brevity, the headings in this portion of answers will not be written in full. Only as much of a heading will be used here as is unique or as is easily identifiable from the practice title printed. The correct form of spacing subheadings will not be followed either.

1. PYRID/\*urine + SOD/\*urine (or NATRIURESIS) + any pertinent heading shown in the annotation under MYOCLONUS/\*urine + HUMAN + INF
2. PEP/\*compl + AGRANULOCYT/\*etiol + HUMAN
3. CEREB/\*pathol + PERIART/\*pathol + BIOPSY + HUMAN
4. BRAIN EDEMA/\*metab + ANIMAL + RATS
5. ELECTROENCEPH (IM) + CEREB ART/\*physiopathol + ACUTE DIS + HUMAN
6. PANCREAS/\*blood supply + ARTERIES/ultrastruct (NIM) + MICROSCOPY, ELECT + HUMAN
7. PSYCHOSES, TOX/\*etiol + ACTH/\*adv eff + 17-HYDROXY/\*urine + PSYCHOSES, TOX/urine + ACTH/admin + CIRCADIAN RHYTHM (if pertinent) + HUMAN
8. LIGHT (IM) (not LIGHTING, not ILLUMINATION) + DEXTRO AMPHET /\*pharm + BEHAVIOR(?) (IM) or MOTOR ACTIVITY(?) (IM) + BEHAVIOR or MOTOR ACTIVITY/drug eff + same/rad eff + ANIMAL + RHESUS MONKEYS (NIM)
9. "normal" as mere controls: LEARNING/\*rad eff + SET (IM) + RADIATION EFFECTS (IM) + ANIMAL + FEMALE + RATS; discussion on both normal & irradiated rats: LEARNING (IM) + LEARNING/rad eff (NIM) + SET (IM) + RADIATION EFFECTS (IM) + ANIMAL + FEMALE + RATS
10. TRYPT/\*metab + SCHIZO/\*metab + KYNURENINE/\*metab or /metab depending on the article + CHROMATOGRAPHY + HUMAN
11. depth: ADREN/\*urine + NORADREN/\*urine + CATECHOL/\*urine + MENT DISORD/\*urine + HUMAN; non-depth: CATECHOL/\*urine + ADREN/urine + NORADREN/urine + MENT DISORD/\*urine + HUMAN
12. HYSTERECTOMY/\*methods + HUMAN + FEMALE + COMP STUDY
13. SERO/\*blood + PREGNANCY (IM) + HUMAN + FEMALE
14. SERO/\*blood + PREGN COMPL/\*blood + PREGNANCY (NIM) + HUMAN + FEMALE
15. SERO/\*blood + PREGN COMPL INFECT/\*blood + MEASLES/\*blood + PREGNANCY (NIM) + HUMAN + FEMALE
16. SERO/\*blood + PREGNANCY (IM) + PREGN COMPL/\*blood + HUMAN + FEMALE





17. HYDRO/\*pharm + ENZYMES/\*blood + ANIMAL + RATS
18. HYDRO/\*pharm + ERYTHR/\*enzymol + ANIMAL + RATS + ERYTHR/drug  
eff
19. GOUT/\*diag + HUMAN
20. GOUT/\*radiogr + HUMAN
21. GOUT/\*diag + DIAGNOSIS, DIFFERENTIAL (NIM) + HUMAN
22. GOUT/\*diag + OSTEOARTHRITIS/\*diag + DIAG, DIFF + HUMAN
23. same as 22
24. HYPERTHYR (IM) + THYR NEOPL (IM) + ADENOMA (IM) + THYR  
DIS (IM) + HUMAN
25. THYROID GLAND/\*abnorm + HUMAN
26. same as 25
27. EYE MANIF (IM) + ARTHR (IM) - subheading to be determined  
by the article + HUMAN
28. CONJUNCTIVITIS(IM) - subheading to be determined by the  
article - + ARTHRITIS (IM) - subheading from article.  
Likely coordination is CONJ/\*etiol + ARTHR/\*compl or  
CONJ/\*compl + ARTHR/\*compl + HUMAN. Consider also  
ARTHRITIS, INFECTIOUS, depending on the article
29. EYE DIS (IM) + ARTHR (IM) + HUMAN, with the same possibil-  
ities regarding subheadings & infection as in 28
30. CONJ/\*etiol + STREPT INFECT (IM) (no subheading if coordi-  
nated with CONJ but it must also be considered with re-  
gard to ARTHRITIS or ARTHRITIS, INFECTIOUS) + ARTHRITIS  
/\*compl or ARTHRITIS, INFECTIOUS/etiol or /compl or  
both. This exercise is open to much discussion.
31. MEASLES/\*compl + BLINDNESS/\*etiol + HUMAN
32. CHLOR/\*adv eff + AGRANUL/\*chem ind + HUMAN + CHILD (NIM)
33. SERO/\*blood + PREGN, ANIMAL (IM) + PREGNANCY (NIM) +  
PREGN COMPL/\*blood + HYPOPHYS (IM) + ANIMAL + DOGS + FEMALE
34. MYOCARD/\*metab + COPP/\*metab + MYO INFARCT/\*metab + MYO  
INFARCT/physiopathol + HEART/\*physiopathol + HUMAN + COMP  
STUDY + ADULT + MIDDLE AGE (NIM)
35. FEEDBACK (IM) + CONCEPT FORM (IM) + SCHIZOPHRENIC PSYCHOL  
(IM) + SCHIZOPHRENIA (NIM) + CHRONIC DIS (NIM) - the C  
schizo needs to be present to coord with CHRONIC DIS (C):  
SCHIZO PSYCHOL (F) is not the proper coordinate - + HUMAN



## Exercise 25 - Practice Titles (page 122)

1. DRIVE (IM) + REINFORCE (IM) + PERSONALITY (IM) + HUMAN
2. ATTITUDE (IM) + LEADERSHIP (IM) + AUTHOR (IM) + HUMAN + SEX FACTORS (NIM)
3. STRESS, PSYCHOL (IM) + DREAMS (IM) + ASSOC (IM) + HUMAN
4. ECHINOCOCCOSIS, PULM/\*compl + ECHINOCOCCOSIS/\*compl + PANCREATIC DIS/\*compl + HUMAN + CHILD PRE + CASE REPT
5. NOREPI/\*metab or /\*anal + DOP/\*metab or /\*anal + BRAIN CHEM/\*drug eff + BEHAV, ANIM/\*drug eff + HYDROXY/\*pharm + PIGEONS (NIM) + ANIMAL
6. LOAIASIS/\*compl + SPOROZOA (NIM) + PROTOZOAN INFECT/\*compl + HUMAN + CASE REPT. FILARIA OCUL HUM in MeSH reads "see LOA LOA" and Loa infection = LOAIASIS
7. ANTIBIOT/\*biosyn + NOCARDIA/\*metab
8. DUOD/\*inj + PANC/\*inj + WOUNDS, PEN (NIM) + WOUNDS, NONPEN (NIM) + HUMAN + CHILD
9. PHONOC (IM) + NOMENCLATURE (IM) but not /stand
10. DIRECT (IM) + OPHTHALMOL (IM) + SOC, MED (IM) + AUSTRALIA
11. EMOT/\*physiol + ADREN CORT/\*physiol + HUMAN or ANIMAL or both
12. GASTRIC JUICE/\*secret + PERIST (IM) + GASTRECTOMY + PEPTIC ULC HEMORRH/\*surg + STOM ULC/\*compl + STOM ULC/surg + PERSONNEL MANAGEMENT (IM) + HUMAN + MIDDLE AGE
13. SEX CHROMATIN (IM) + TURN SYND/\*familial + HUMAN + FEMALE
14. AMANT/\*ther use + INFLU/\*drug ther + INFLU VIRUS TYPE A, HUM (NIM) + INFLU/microbiol + RESP TRACT INFECT/\*drug ther + VIR DIS/\*drug ther + MILITARY MED (IM) + HUMAN + FINLAND + probably MALE
15. AMINO ACIDS (IM) (possibly /\*anal) + SKIN (IM with possibly FINGERS NIM) + CHROMATOG (IM) + HUMAN
16. RNA,VIRAL (IM; possibly also NIM with /isol if the isol technic is discussed) + MOSAIC VIRUSES/\*anal + ALFALFA/microbiol
17. HEART/\*drug eff + ISONIAZID/\*pharm + ANIMAL + GUINEA PIGS + RABBITS + COMP STUDY
18. ADREN CORT/\*cytol + CORT/\*secret or /\*biosyn + ADREN CORT/ultrastruct + ANIMAL + RATS + MICR, ELECT + CARB RADIO/diag use
19. CYSTIC FIBROSIS/\*hist + HUMAN + HIST ART + 19TH CENT but not CASE REPT (Manual 18.11.7)
20. NEPHR/\*diag + RADIOISO RENOGR (IM) or NEPHR/\*radiogr + KIDNEY /\*radiogr + HUMAN



## Exercise 26 - Practice Titles (page 123)

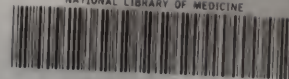
1. PULM FIBROSIS (IM) + BILE DUCTS/\*pathol + ADREN MEDULLA  
/\*pathol + SCLEROSIS (NIM) + HUMAN
2. LIVER/\*physiopathol + LIVER/pathol + PANCREAT/\*physiopathol  
+ PANCREAT/pathol + HUMAN + CHRONIC DIS + RECURR
3. PHOSPHORUS/\*metab + MUSCLES/\*metab + DIAPH/metab + PHOSPHATES  
/metab + PHOSPHORUS RADIO/diag use (if discussed) + ANIMAL  
+ RATS
4. FAMOUS PERSONS (IM) + MOTION PICTURES (IM) + SUICIDE/\*hist  
+ SUICIDE/psychol (NIM) + HIST ART + HIST BIOG + HUMAN +  
FEMALE + 20TH CENT + UNITED STATES + Monroe M in Field 15
5. ALCOH DRINK (IM) + SMOKING (IM) + SMOKING/psychol (NIM) +  
JEWS (IM) + BLACKS (IM) + ETHNIC GROUPS (IM) + PUERTO RICO  
/ethnol + NEW YORK CITY + HUMAN + COMP STUDY + PSYCHOLOGY  
(NIM to coordinate with ALCOH DRINK); there remains "epi-  
demiological study" as possibly EPIDEMIOLOGY (NIM) to co-  
ordinate with ALCOH DRINK but SMOKING/occur (NIM) is re-  
quired
6. HEART DISEASES (IM): not /\*drug ther since the thyroid antag-  
onists were not given for the heart disease;+ THYR ANTAG/\*ther  
use + HUMAN + CHILD PRE + FOLLOW-UP STUDIES + CASE REPT
7. DERMATOLOGY/\*man + FUTUROLOGY (IM)
8. NURSING CARE/\*stand + CHRONIC DISEASE/\*nurs + HOSPITALS,  
SPECIAL/\*stand + HUMAN
9. AUDITORY PERC/\*physiol. The purpose of this is to remind  
indexers that /physiol is available to Cat F1 & F2.
10. BILE AC & SALTS/\*anal + CHROMAT, THIN LAYER - IM or NIM  
depending upon the journal & the article
11. POLITICS (IM) + AUTHORITARIANISM (IM) + UNITED STATES
12. PANCREAS/\*pathol + PANCREAT DIS/\*pathol + HUMAN or ANIMAL  
or both
13. GLUCAG/\*pharm + INSUL/\*pharm + GLUCOSE/\*metab + GLUCO-  
NEO/\*drug eff + LIVER/\*metab + LIVER/drug eff + BICARB/  
\*pharm + ANIMAL + RATS + PERFUSION if discussed
14. GASTR MUCOSA/\*pathol + GASTRITIS/\*chem ind + /pathol + ALCOHOL,  
METHYL/\*pois + POSTOP COMPL + HUMAN; POSTOP COMPL must be  
discussed from standpoint of IM vs NIM and from standpoint  
of sensible subheadings; BIOPSY is subject to question also:  
it is not indexed unless actually discussed
15. ADREN MEDUL/\*surg + FRACTURES/\*physiopathol + WOUND HEAL (IM)  
+ ANIMAL + RATS; the subject of ADREN MEDUL/surg vs ADREN  
MEDUL/physiol is open to discussion depending upon the arti-  
cle







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Leaves deacidified with methyl  
magnesium carbonate & joined  
with a PVA adhesive. Bound in  
full cloth with unbleached  
linen hinges & acid free end  
signatures.

Sky Meadow Bindery  
April 1990

